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# PRETREATMENT/MATERIALS HANDLING STUDY REPORT

## AMERICAN CHEMICAL SERVICE (ACS) SITE

SUBMITTED TO:

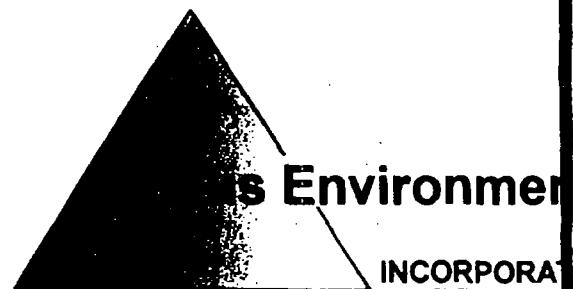
 EPA REGION V

SUBMITTED BY:

ACS RD/RA  
EXECUTIVE COMMITTEE

FOCUS PROJECT No: 119603  
OCTOBER, 1997

PREPARED BY:



Engineering Solutions to Environmental Problems  
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MONTGOMERY WATSON

10/97

October 31, 1997

Ms. Sheri Bianchin, RPM  
Mail Code SR-J6  
U.S. EPA, Region V  
77 West Jackson Blvd.  
Chicago, IL 60604-3590

Re: Submittal Pre-Treatment / Materials Handling Study Report  
American Chemical Service NPL Site  
Griffith, Indiana

Dear Ms. Bianchin:

The attached report is the first of a two-part submittal reporting on the Material Handling / Low Temperature Thermal Treatment (MH/LTTT) Treatability Studies conducted at the American Chemical Service (ACS) Site during the last four months. Two copies of the first report: the Pre-Treatment / Materials Handling Study Report, are being submitted on November 3<sup>rd</sup> as previously agreed with the U.S. EPA. The report on LTTT will be submitted to you on December 9, 1997, also as agreed with U.S. EPA.

Focus Environmental Inc. (Focus) was retained by the Executive Committee to determine the feasibility of treating the ACS Site waste materials by LTTT methods as defined in the Record of Decision (ROD). Focus directed the treatability study field work and is preparing both reports. In this first report, Focus has shown that the quantity and distribution of waste in the ROD-listed categories are significantly different from the what the writer of the ROD anticipated when developing the U.S. EPA selected remedy.

#### **ROD Remedy**

A number of treatment and disposal components were specified for the waste material on pages 28 and 29 of the ROD. These include: LTTT of buried waste; off-site incineration of intact drums buried in the On-Site Area; off-site disposal of heavy metal contaminated soils; in-situ vapor extraction (ISVE) of VOC-contaminated soils; off-site disposal of condensate from LTTT or ISVE processes; and steam-cleaning and off-site disposal of miscellaneous debris uncovered during excavation activities. In 1994, Weston, U.S. EPA's over-site subcontractor, developed an estimate of the cost applying the ROD remedy to the site waste and concluded that the total remedial cost for the Site would be approximately \$70 million. The following were the expected components of the cost.

<b>Capital Costs</b>					
LTTC	117,000 cubic yards	\$35.1 million	76%		
Off Site Disposal	10,000 cubic yards	\$2.5 million	5 %		
ISVE	180,000 cubic yards	\$3.6 million	8 %		
Drum Removal & Disposal	500 drums	\$1.4 million	3 %		
Miscellaneous	Other	\$3.7 million	8 %		
		\$46.3 million	100 %		
<b>Indirect Capital Costs</b>					
		\$5.8 million			
<b>Operation &amp; Maintenance Costs</b>					
Groundwater Treatment, ISVE, and monitoring		\$17.7 million			
<b>Total Remedial Cost Estimated by Weston</b>					
		\$69.8 million			

As the above tabulation indicates, Weston allocated more than 75 percent of the capital remedial costs to LTTC and less than 10 percent to off-site disposal.

### **Material Handling Study Findings**

While Focus was not tasked to develop remedial costs at this time, their Material Handling Study provides a basis for making a comparison with the Weston estimate because it provides a breakdown of the volumes and characteristics of the site materials that would need to be treated under the ROD remedy. Focus found that under the existing ROD definitions, only 57 percent of the waste might be amenable to LTTC after separation from other on-site debris and more than 70 percent of the contaminated material would require off-site disposal. (It is not yet clear that the 57% is amenable to LTTC. The results of the Treatability Study must be evaluated before that determination can be made.)

Clearly, the volumes represented by these percentages will lead to a significantly different remedial cost distribution and total than anticipated in the ROD. In addition, the types of materials observed represent different handling and risk issues than were evaluated during preparation of the ROD. When the LTTC portion of the treatability studies are completed, Focus will provide a detailed cost estimate for LTTC of the Site wastes based on the MH / LTTC Study findings. Focus is currently completing components of the LTTC treatability studies and will be reporting the results in December. If you have any questions in the meantime, please don't hesitate to call me at (630) 691-5020.

Sincerely,

MONTGOMERY WATSON INC.

Joseph D. Adams Jr., P.E.  
Project Coordinator

cc: S. Mrkvika, B&V (2 copies of the report)  
C. Brown, IDEM (3 copies of the report)  
ACS Technical Committee (1 copy)



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**PRETREATMENT/MATERIALS HANDLING STUDY REPORT**  
**AMERICAN CHEMICAL SERVICE (ACS) SITE**

Submitted to:

US EPA REGION V

Submitted by:

ACS RD/RA EXECUTIVE COMMITTEE

**October 1997  
Focus Project No. 119406**

**PREPARED BY:**

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**American Chemical Services Site**  
**Pretreatment Material Handling Study Report**

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**LIST OF ACRONYMS**

ACS	American Chemical Services
BETX	Benzene, Toluene, Ethylbenzene, and Xylene
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	Contaminant of Concern
EPA	Environmental Protection Agency
ft <sup>2</sup>	square feet
ISVE	In-situ Vapor Extraction
LT TT	Low Temperature Thermal Treatment
mg/kg	milligram per kilogram
MSL	mean sea level
OSHA	Occupational Safety and Health Association
PCB	Poly Chlorinated Biphenyls
PEL	Permissible Exposure Limit
PMHS	Pretreatment/Material Handling Study
PPE	personnel protective equipment
ppm	parts per million
PRP	potentially responsible party
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SOW	Statement of Work
SVOC	Semivolatile Volatile Organic Compounds
TSDF	Treatment, Storage, and Disposal Facility
UAO	Unilateral Administrative Order
VOC	Volatile Organic Compounds
yd <sup>3</sup>	cubic yard

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**1.0 INTRODUCTION**

**1.1 SITE DESCRIPTION**

**1.1.1 Site Size and Borders**

The American Chemical Service (ACS) Site is located at 420 South Colfax Avenue in the City of Griffith, Indiana, in the northwest corner of the state. The Site is bordered on the east and northeast by Colfax Avenue. The Chesapeake and Ohio Railway bisects the Site in a northwest-southeast direction, between the fenced On-Site Area (north) and the fenced Off-Site Area (south). On the west and northwest, south of the Chesapeake and Ohio Railway, the Site is bordered by the abandoned Erie and Lackawanna Railway, and the Griffith Municipal Landfill. North of the Chesapeake and Ohio Railway, the Site is bordered on the west by wetland areas. The northern boundary of the Site is formed by the Grand Trunk Railway.

The Site comprises approximately 30 acres of land including the On-site Containment Area, the Still Bottoms Pond/Treatment Lagoon, the Off-site Containment Area, and the Kapica/Pazmey Area. The official boundary of the Griffith Municipal Landfill is west of the Off-site Containment Area, however, refuse from the municipal landfill is collocated with waste materials in the Off-site Containment Area such that there is no distinguishable boundary between the two. The landfill, which is an active solid waste disposal facility that has operated since the 1950s, currently is undergoing closure.

The terms On-Site and Off-Site are used to denote particular portions of the ACS Site. Both areas are within the CERCLA Site. The Off-Site Containment area is designated as off-site only because it is adjacent to, rather than within the boundaries of the property where ACS currently conducts its chemical formulation operations. However, ACS owns the property and as noted, for CERCLA purposes, both of these areas are considered on-site.

**1.1.2 Operational History**

The Site contains an active chemical processing facility and several former land disposal areas. The chemical processing facility began operation in May 1955 as a solvent recovery facility. Solvent recovery remained the primary on-site operation until the late 1960s, when operations changed to the manufacture of small quantities of specialty chemicals. These manufacturing operations included treating rope with fungicide, bromination, and treating ski lift cable.

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In 1961, ACS sold a two-acre parcel to Mr. John Kapica, and in 1962 Mr. Kapica began operating a drum reclaiming/reconditioning business at the location. Kapica Drum was sold to Pazmey Corporation in February 1980. Kapica and Pazmey operated from 1980 to 1987. The Pazmey Corporation property was sold to Darija Djurovic in March 1987.

ACS' solvent operations included recovery of spent solvent mixtures containing alcohols, ketones, esters, chlorinated solvents, aromatics, aliphatics, and glycols. In the early years of operation, spent solvents were stored in 55-gallon drums at various locations at the Site. Solvent was recovered in batch evaporation units, which were charged by pumping material directly from 55-gallon drums into the evaporation vessels. Until 1966, still bottoms from the evaporation vessels were disposed in the Still Bottom Pond. ACS installed its first incinerator in 1966 and installed a second incinerator in 1969. The incinerators were used to burn still bottoms and non-reclaimable materials generated at the Site, and wastes from off site. The incinerator units were dismantled in 1977.

From 1970 to 1975, spent solvents reclaimed at the Site were similar to those handled in the 1960s. However, during this period an increasing percentage of shipments were received at the Site in bulk tanker trucks. In addition, the batch manufacturing processes were expanded during this period. A lard oil process, tallow and animal rendering, was used to manufacture a lubricant product. This process, as well as a soldering flux operation, was discontinued prior to 1990. In 1971, the additive manufacturing area was built to produce various detergents, lubricants, and chemical additives, in addition to soldering flux, various amines, methanol, formaldehyde, sodium hydroxide, and maleic anhydride. An epoxidation plant was constructed in 1974, and a bromination operation using hexane was added in 1975. The epoxidation plant used toluene or benzene as a reaction carrier at various times up until 1990.

Some time between 1975 and 1990, the solvent distillation units were replaced with new units, although the types of solvent wastes reclaimed remained essentially the same. Spent and reclaimed solvent recovery tank farms were constructed during this period, and the majority of the spent solvent waste streams were shipped in bulk tanker trucks, although drummed wastes were still processed. A hazardous waste drum unloading dock and storage area was built in the early 1970s, with spill containment curbing and a sump area added at a later date. In September 1990, ACS ceased accepting hazardous waste shipments and filed for closure. On March 31, 1993 ACS completed closure and terminated its interim Resource Conservation and Recovery Act (RCRA) permit status.

ACS currently operates a chemical production facility at the Site. The operations include chemical reaction processes, custom blending, and product distribution. The facility encompasses 8.5 acres with a

## American Chemical Service Site

### Pretreatment Material Handling Study Report

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process building, tank farms, loading and unloading areas, a laboratory, offices, and support utility buildings. The company operates 24 hours per day, five to six days per week. The operating production facility is secured by a continuous fence with a single, controlled access gate.

#### **1.1.3 Land Disposal History**

When ACS began operations in 1955, the still bottoms from the solvent recovery operations were disposed of in the Still Bottoms Pond/Treatment Lagoon area. In 1972, the pond and lagoons were drained, and were used to landfill drums partially filled with sludge materials.

The Off-site Containment Area was used to landfill wastes including materials excavated from the Still Bottoms/Treatment Lagoon between 1958 and 1975. The waste types disposed in the Off-site Containment Area over the course of ACS' operations also included general refuse, drums, still bottoms and incinerator ash. According to the ACS, Inc. owner/operator, drums placed in the Off-site Containment Area were crushed or punctured as part of the disposal process.

During the mid-1960s, an estimated 400 drums of sludge and semi-solids were landfilled in the On-site Containment Area. No intact drums were observed in test pits excavated in 1993. Residual wastes and rinse waters from the Kapica/Pazmey drum reconditioning operation were discharged to the ground in the Kapica/Pazmey Area.

#### **1.1.4 Administrative History**

The U.S. EPA performed a Preliminary Assessment of the ACS Site, and collected samples in the Off-Site Containment Area in February 1980 and at the Griffith Municipal Landfill in May 1980. The U.S. EPA performed a site inspection on September 9, 1980. In July 1982, U.S. EPA contractors installed four monitoring wells near the Off-Site Containment Area and the Griffith Landfill. Based on information developed during these investigative efforts, U.S. EPA assigned a hazard ranking system score of 34.98 to the ACS Site in June 1983.

In 1986, approximately 125 Potentially Responsible Parties (PRPs) formed a Steering Committee to conduct the Remedial Investigation/Feasibility Study (RI/FS) pursuant to an agreement with the U.S. EPA. The PRPs signed a Consent Order to perform the RI/FS in June 1988. Following U.S. EPA approval of the RI/FS Work Plan, the field investigation for Phase I of the RI began in July 1989. Phase II RI field work began in March 1990. The Phase III RI field work was initiated in December 1990. The RI report was completed in June 1991. Warzyn (now Montgomery Watson) completed the FS report in June 1992.

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In June 1992, the U.S. EPA published notice of its Proposed Plan for Remedial Action for the ACS Site. The remedy presented in that Proposed Plan was described by U.S. EPA as a modification of Remedial Alternative 6B from the FS. The U.S. EPA issued the ROD for the Site in September 1992. The Unilateral Administrative Order (UAO) was issued on September 30, 1994. The Respondents provided notice to the U.S. EPA of their intent to comply with the UAO, and have complied with the schedule in the UAO for developing planning documents and performing other required tasks to date.

#### 1.1.5 Chosen Remedy

On page 8 of the Statement of Work (SOW), EPA identifies "buried waste" as follows:

- Areas of contamination with concentrations of total volatile organic compounds (VOCs) in excess of 10,000 mg/kg in the Off-site Containment Area
- Soils contaminated with concentrations of PCBs in excess of 10 mg/kg in both the On-site and Off-site Containment Areas.

Contaminated soils were defined as soils containing contaminants of concern (COCs) at concentrations in excess of the cleanup goals but with concentrations less than those establishing the materials as "buried waste".

Based on these definitions, EPA established the following components of the remedy for the site on pages 28 and 29 of the Record of Decision (ROD):

- Intact buried drums in the On-site Containment Area will be excavated for off-site incineration
- Low temperature thermal treatment (LTTT) of buried waste in the Off-site Containment Area
- In-situ soil vapor extraction (ISVE) of contaminated soils
- Isolated pockets of heavy metal contaminated soil greater than 500 ppm lead in both the On-site and Off-site Containment Areas will be excavated, treated by LTTT to remove VOC's and SVOC's, possibly immobilized to remove the hazardous waste characteristic for metals and sent off-site for disposal
- LTTT of VOC contaminated soil unable to be treated by ISVE
- Condensate from LTTT or ISVE processes will be properly disposed off-site
- Steam cleaning and off-site disposal of miscellaneous debris.

Under the chosen remedy, all "buried waste" and contaminated soil must be treated to comply with the cleanup goals (or remediation levels) summarized in Table 1-1. For carcinogenic contaminants, these cleanup goals represent a carcinogenic risk of  $1 \times 10^{-6}$  for individual contaminants. Based on the number of carcinogenic COCs, the cumulative risk that must be attained is therefore  $3.3 \times 10^{-5}$  for carcinogenic

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COCs. For noncarcinogenic COCs, the cleanup goals represent the acceptable concentration for the specific noncarcinogenic contaminant if no other noncarcinogenic contaminants are detected in the soil. If more than one noncarcinogenic contaminant is detected in the soil, then in addition, the cumulative hazard index must be less than 1.0.

### 1.2 STUDY OVERVIEW

Previous investigations have indicated that significant amounts of drums and debris are present at the site which could impact application of the ROD remedy. The ROD remedy requires intact drums to be transferred off-site for incineration and debris to be steam cleaned prior to off-site disposal. To accomplish the ROD remedy, materials not amenable to LTTT (i.e., drums and debris) must be segregated from soils requiring LTTT. Therefore, it is important to determine an estimate of the quantity of buried drums and the quantity, characteristics, and screenability of debris at the site.

In addition, due to the significant number of COC's identified at the site and stringent cleanup goals, the ability to comply with the cleanup goals using LTTT technology needed to be demonstrated. Therefore, in August of 1996, Montgomery Watson submitted to EPA the Pilot/Treatability Testing QAPP and Field Sampling Plans (QAPP) which defined activities planned to collect information for evaluation of the chosen technology. Appendix C to the QAPP was prepared by Focus Environmental, Inc. (Focus) and defined activities associated with the Pretreatment/Material Handling Study (PMHS). This report provides a summary of the PMHS and associated results.

The original objectives of the PMHS included:

- Assessment of the type and quantity (percentage) of debris in representative soils to be remediated
- Assessment of the ability of conventional material handling equipment to effectively separate debris from soils to be thermally treated
- Determine the magnitude of the VOC fugitive emissions during excavation activities
- Collect soil samples for thermal treatability testing.

Montgomery Watson began implementing the PMHS in May, 1997 by excavating five test pits in the Off-Site Containment Area per the approved plan. After excavating the test pits, it was apparent that four of the five test pits were primarily drums with some soil and that screening of these materials would not accomplish the objectives of the study. Consequently, the materials from four of the five test pits were placed back into their respective excavations and then covered with the soil previously removed from the

## American Chemical Service Site

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surface of the excavations. One of the test pits contained primarily municipal debris and soil and was left open for potential screening at a later date.

Montgomery Watson contacted Focus regarding the findings and discussed potential courses of action. Based on these discussions, additional objectives were added to the PMHS including:

- Identify area which contain a mixture of waste debris and contaminated soil that are representative of the material which would potentially be segregated and thermally desorbed on-site.
- Determine the aerial extent of the drum disposal area or areas (areas that are essentially drums with little or no soil and other wastes)
- Collect samples of organic wastes and contaminated soil for characterization

Tentative locations for additional test pits were also identified to provide waste materials that would allow accomplishment of the original PMHS objectives. Montgomery Watson prepared a supplemental plan describing the additions which was submitted to EPA on July 11, 1997. The supplemental plan was reviewed by EPA and comments were addressed in a meeting at the site the day field work was to restart.

The PMHS was restarted on July 16, 1997 with Focus personnel providing field direction and Montgomery Watson providing field equipment and labor. Montgomery Watson provided PMHS oversight and the ambient air monitoring described in the plan. The site work (trenching, excavation of test pits, screening of soils, and collection of waste samples) and personnel air monitoring was subcontracted by Montgomery Watson to Midwest Material Services. Photographs (Appendix A) and video (available from Focus, Montgomery Watson, or EPA upon request), were taken by Focus to provide visual documentation of PMHS activities. Focus maintained a site logbook (Appendix B) to provide a written record.

#### 1.3 EQUIPMENT DESCRIPTION

Excavation and trenching of soil during the two phases of the PMHS required a track hoe. A front end loader was used for moving soils from the test pits to the screening location and back to the test pits. Screening of soils from selected test pits was conducted using a vibratory screen with a 6" rough cut screen followed by a 2" screen. A portable truck scale was used to obtain weights of screened soil and debris. Screening was conducted to determine screening capabilities and allow determination of approximate debris contents for soil from selected areas. Air samples were collected using Summa canisters.

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### 2.0 STUDY EXECUTION

#### 2.1 LOCATION OF TEST PITS

During the PMHS, several locations were investigated to accomplish the objectives of the study. Table 2-1 provides a description of these locations which include several test pits. Figure 2-1 provides a map of these locations. The reference coordinates corresponding to these locations are presented in Table 2-2. The test pit locations were selected with the intent to access contaminated soils and waste in the Offsite Containment Area which are representative of the materials which would potentially be segregated and thermally treated. Use of the soil boring logs and auger probe descriptions from earlier investigations conducted by Montgomery Watson aided in selecting the locations for the five initial test pits; SA01 through SA05. Locations for Test Pits D01 and D02 were selected in the field to correspond with the edge of the drum storage area which was determined by trenching. These locations were chosen with the intent of producing soils for treatability testing that are potentially contaminated with materials stored in the drums. See Photo P16 in Appendix A for a picture of material similar to the material found in Test Pit D01.

The Kapica/Pazmey area of the site included a disposal area that contained drum carcasses and lids from past drum recycling operations. The location of Test Pit KP01 was chosen in the field by Focus to provide a representative sample of materials from this area. See Photos P19, P20, P21, P22 and P23 in Appendix A for pictures of materials in the Kapica/Pazmey Area and Test Pit KP01.

During installation of the barrier wall, Montgomery Watson had removed soil and municipal debris from the south and southwest portions of the site in the area where the barrier wall was to be installed. The excavated material was stockpiled in a spoil pile at the south end of the site. Based on past analytical data, these soils were assumed to be contaminated with VOCs and PCBs. Therefore, two separate locations were identified on the western face of the spoil pile for accessing material for screening. These two Test Pits were labeled SP01 and SP02. See photos P07 and P08 in Appendix A for pictures of the material represented by Test Pits SP01 and SP02.

In addition to these test pits, Test Pits SA02 and SA04 were reopened to collect samples of any accessible drum contents for analysis. The results from these sample analyses would provide additional data regarding potential contents of the drums disposed of at the site. In addition, soil commingled with the drums was sampled to provide samples likely representing worst case materials that may be processed through the LTTT system. See Photos P28, P29, P30, and P31 for pictures of the reopening of Test Pits SA02 and SA04.

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### 2.2 EXCAVATION

Test pits were excavated in a trench-like manner with no particular dimensions. The total tonnage of material removed from each pit varied in order to obtain enough material to represent the specific area. Because the soil was primarily sand or silty sand all personnel had to exercise caution near the excavations to avoid cave-ins and other health hazards. Personnel were not allowed in the test pits.

How deep?  
Why no  
gw  
encountered

Water was not encountered during the excavation of test pits in the Off-site Containment Area. The deepest elevation for the test pits excavated during the PMHS was approximately 632 feet MSL in Test Pit D01. Excavation of soils below this elevation could require dewatering prior to excavation.

### 2.3 SCREENING

#### 2.3.1 Location of Screen

The screening equipment was located in a central location which was close to test pit D-01 to allow easy access to the screen from all other test pit locations. See Figure 2-1 for the location of the screen.

#### 2.3.2 Screening Protocol

Screening of soils from selected test pits was conducted using a vibratory screen with a 6" rough cut screen followed by a 2" screen. Material brought to the screen was weighed on a portable truck scale prior to screening. The material was then processed through the screen which generated two streams: the oversized reject and the screened soil. The time required for each load of soil to pass through the screen was recorded. Travel time for the front end loader to and from the test pit was not recorded or included in the data. The oversized reject debris was returned to the test pit from which it came. The screened soil was sampled, weighed and returned to the test pit. The data collected from the screening activities were used to calculate debris content and screening rates (see Section 3.2). Photo P24 in Appendix A shows the screen used in this work. Photos P25 and P26 show pictures of some of the oversized reject and the screened soil from one of the test pits, respectively.

### 2.4 TRENCHING

The primary purpose of the trenching activities was to determine the aerial extent of the drums disposed of in the Off-site Containment Area. Trenches were initiated in an area where drums were expected to be located with the general location of the trench noted in the site logbook. Soil cover was excavated until drums were encountered. The approximate depth from site surface to the top of the drums was noted in

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the site logbook. The excavator operator was then directed to move the excavation approximately 15 feet in a direction assumed to be toward the outer edge of the drums. The process was repeated and the trench extended outward until drums were no longer encountered. The approximate location of the edge of the drum burial area was marked with a stake and labeled "ED" to indicate "Edge of Drums" followed by the trench number. This process was continued around the perimeter of the drum disposal area until the approximate boundary of the drum disposal area was identified.

In addition, several point excavations were conducted in the middle of the drum disposal area to determine the approximate depth to the top of drums throughout the region. These point excavations were also staked and labeled "PE" to indicate the stakes were point excavations followed by sequential numbers matching the notes in the field logbook. Photos P11, P12, P13, P14, P15, and P16 in Appendix A were taken during the trenching activities and provide visual documentation of some of the materials encountered during the trenching study.

## **2.5 SOIL AND LIQUIDS SAMPLING**

### **2.5.1 Sampling Procedures**

Various samples were collected during the PMHS. Types of samples collected include:

- Composite soil samples of screened soil from test pits KP01, D01, D02, SP01, and SP02
- Composite soil samples taken of soils from reopened Test Pits SA02, SA04, and SA01
- Grab samples taken of accessible drum contents when Test Pits SA02 and SA04 were reopened.

Composite samples of screened soil consisted of several grab samples collected to form a 5 gallon soil sample of the screened soil. The grab samples were collected from the exterior (surface) and interior (1 to 2 feet into the pile) of the soil pile and blended with a shovel in the sample bucket to generate the most representative sample possible. This sample was then divided into smaller samples to be sent to laboratories for analysis, with the remainder going to the treatability test laboratory for potential use in the thermal treatability study.

Composite samples of soil from the reopened test pits were generated by collecting several grab samples of soils containing visible liquids from the commingled drums. The sample volume was approximately 5 gallons. This volume was then divided as described above for the various analyses that were to be performed on the matrix.

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Grab samples of liquids were collected directly from punctured drums encountered during the reopening of Test Pits SA02 and SA04. Each sample was then split into two samples for analysis; one to be sent to the a treatment, storage and disposal facility (TSDF), and one to be sent to the analytical lab. All samples were packaged in glass containers with Teflon lined lids.

#### **2.5.2 Sample Nomenclature**

Sample numbers had the following format:

AAA-P-LAB

Where: AAA = Pit or Trench Reference number

P = Matrix (S = soil, O = organic liquid)

LAB = Three letter code for the analytical laboratory

Example 1: SA04-S-IEA = Sample was soil from pit SA04, and was sent to IEA for analysis.

#### **2.5.3 Sample Custody**

All samples taken were logged on a Chain of Custody form by the sample packager, and the Chain of Custody form was enclosed with the samples after it had been signed by the sample packager. One copy was retained by the sample packager, and one went with the samples and was returned with the official data package from the laboratories. Samples were packaged and shipped for overnight delivery to the respective laboratories and received without breakage and at 4 °C where applicable. Copies of the chain of custody forms are included in Appendix C.

#### **2.5.4 Field screening for PCBs**

Since PCBs are one of the primary COCs of interest for thermal treatability testing, Montgomery Watson provided on-site immunoassay field testing for the presence of PCBs for all the soil samples that were collected. An aliquot of each composite soil sample was analyzed using an immunoassay field screening technique. The results indicated PCBs were present in excess of 10 mg/kg in all soil samples. Raw data from the field screening analyses are presented in Appendix D.

### **2.6 AMBIENT AIR MONITORING**

Montgomery Watson was responsible for the on-site ambient air monitoring activities to measure fugitive emissions. Daily eight hour ambient air samples were collected upwind and downwind of the material

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handling activities during on-site excavation, trenching, and screening activities. When the trenching or excavation moved to another location, the canisters were moved to maintain an upwind and downwind orientation.

Meteorological data was recorded concurrently with sample collection activities. Data collected included ambient air temperatures, humidity, barometric pressure, and wind speed and direction. Data were obtained from a portable meteorological station positioned on the site during the field work.

Ambient air sampling was conducted with Summa canisters using EPA Method T014. Samples were collected by setting the flow controller attached to the Summa canister to intake a constant sample flow rate for eight hours of sampling time. The sample collected in the canister was therefore a composite sample of air for the eight hour span. The sampling locations were approximately 100 feet upwind and 100 feet downwind of each test pit or trench. Two baseline samples were collected at the site, one upwind and one downwind, prior to the initiation of PMHS activities to provide background results. The Summa canisters were sent to Quanterra Environmental Services in Santa Ana, California for analysis.

## 2.7 DECONTAMINATION / DEMOBILIZATION

All equipment used in the PMHS field activities was decontaminated before leaving the site by dry scrubbing followed by pressure washing to prevent movement of contaminants off-site.

## 2.8 HEALTH AND SAFETY PROCEDURES

The original Health and Safety Plan for the on-site remedial design activities was provided by Montgomery Watson. Each subcontractor at the site was responsible for their own health and safety plan. On-site activities conducted as part of the PMHS complied with the requirements established in the approved Health and Safety Plan. Montgomery Watson provided health and safety oversight during excavation and material screening tests, as required. Personnel air monitoring was done by Midwest Material Services during soil-intrusive site work. Background readings registered approximately 1 to 2 ppm of VOC in the breathing zone. Peak readings during material handling activities (taken on the downwind side of excavations) ranged from 3 to 20 ppm VOC. No personnel worked in the downwind areas unless absolutely necessary. Personnel collecting samples of the organics from the drums when Test Pits SA02 and SA04 were reopened used Level B Personnel Protective Equipment (PPE). All discarded PPE and other generated wastes were managed by Montgomery Watson for appropriate disposal during the demobilization phase of the PMHS.

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### **3.0 RESULTS**

#### **3.1 TRENCHING**

A survey was conducted at the site the week following the PMHS to document the exact location and ground surface elevation of all stakes indicating edge of drums and point excavations. The results from this survey are included in Table 2-1. Figure 2-1 shows the locations of the stakes used to mark the edge of drums and point excavations from the PMHS.

During the exploratory trenching activities, notes were taken to identify the depth from the ground surface to the top of the buried drums. The estimated depth to top of drums at each point is also summarized in Table 2-1. Drums were encountered within 1 to 2 feet of the surface in most of the trenches with the exceptions of trenches on the west side of the drum disposal area (Exploratory Trenches #4, #5, #9, and #10) and the southeast side (Exploratory Trench #8). Drums in these areas were covered with 6 to 10 feet of overburden which included soil and debris. Overburden on the west side of the drum disposal area contained significant quantities of municipal debris (visual estimates ranged from 30 to 90 percent). Debris included paper, wood, plastic, tires, carpet, tree limbs, fruit packing crates, chain link fencing, and other debris typically found at municipal landfills. Figure 3-1 shows the approximate areas where municipal debris and drums are known to be located based on historical information and data and observations during the barrier wall installation and PMHS. Figure 3-1 also shows the approximate location of drum carcasses in the Kapica/Pazmey area of the site. No attempt was made during the trenching effort to establish depth to the bottom of drums. See Section 4.3 regarding calculation of the volume of the site where drums were determined to be stored in the Off-site Containment Area.

During the trenching operations and reopening of Test Pits SA02 and SA04, various types of materials were observed associated with the buried drums. These materials include:

- Volatile organic liquids (liquid samples SA04-O-01 and SA04-O-02)
- Liquid with the appearance and consistency of water was found in a drum in Test Pit SA02 (liquid sample SA02-O-01)
- A gray rubbery material which vibrated when touched was found in a drum in Test PIT SA04
- Granular solids with vivid colors (red, green, purple, and yellow) that would crumble when pressure was applied. Soil sample SA01-S-01 included grab samples of these colored materials mixed in with the soil.
- A black, sticky liquid with a strong burnt carbon odor was sampled from a leaking drum in Test Pit SA02 (liquid sample SA02-O-02)
- A cream colored material with the consistency of thick paint squirted from a drum in Test Pit SA01 when the drum was dented and punctured with the excavator bucket.

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These observations provide documentation of the varied nature of the contents of the drums disposed of at the site.

#### 3.2 SCREENING

Using the measured weights of total material and screened soil for each test pit that was screened, the weight of debris screened from the material was calculated. The data was used to calculate the weight percent debris for each test pit screened. The screening rate for each test pit was calculated by dividing the total tons of material screened by the time required to screen the material. The results from the screening operations are summarized in Table 3-1. Raw data from the screening operations are summarized in Appendix E. Photograph P25 in Appendix A shows typical debris rejected from the screen during the PMHS.

#### 3.3 ANALYTICAL RESULTS

The following sections summarize the analytical data for samples collected during the PMHS. Certificates of analyses from samples analyzed at IEA Laboratories are included in Appendix F. Certificates of analyses for samples analyzed at Galbraith Laboratories are included in Appendix G.

##### 3.3.1 Soil Samples

Soil samples collected at the site were analyzed for volatiles (Method 8260A), semivolatiles (Method 8270), pesticides/PCBs (Method 8081), and total metals (Method 6010A). A summary of the detected organic COCs is provided in Table 3-2. These results indicate that all the soil samples collected were contaminated with PCBs in excess of the 10 mg/kg cleanup goal except for the sample from Exploratory Trench #12 and the "02" sample for Test Pit SA01. The highest concentrations of PCB were found in samples from Test Pits KP01, SA02, and SA04. The highest concentrations of volatiles were found in samples from Test Pits SP01, SP02, SA02 and SA04. The primary semivolatile COCs detected at concentrations in excess of the cleanup goals are bis(2-ethylhexyl)phthalate and isophorone.

A summary of the total metals analyses is provided in Table 3-3. These results indicate that the soil sample from Test Pit D01 had the highest metals contamination of all soil samples collected during the PMHS. Concentrations of all five metal COCs (antimony, barium, cadmium, chromium and lead) exceeded the cleanup goals in this soil sample. The only other metal COC exceeding cleanup goals in the other soil samples was antimony in samples from Test Pits SP01, SP02, and SA02 and lead in samples from Test Pits D02, SP01, SP02, KP01, SA01 and SA02.

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The soil samples (except for soil sample T12 and the two soil samples for Test Pit SA01) were also analyzed for higher heating value, chemical moisture (Karl Fischer analysis), ultimate analysis (moisture by weight loss, carbon, hydrogen, nitrogen, sulfur, total chlorine/chloride, ash and oxygen by difference) and volatile matter. Table 3-4 provides a summary of the results of these analyses. These results indicate a significant concentration of total chlorine/chloride and total carbon, particularly samples SP02, SA02, and SA04. The heating values also indicate significant organic content.

The volatiles analysis was conducted at two different test temperatures (1,022, and 1,742 °F). The lower temperature is in the high range of typical LTTT processes. The higher temperature is the standard temperature for conducting the volatiles analysis. These results are also summarized in Table 3-4. The "volatiles" results represent quantity of materials that would be vaporized from the soil at the specified temperature. Since these samples were analyzed on an "as-received" basis, the volatiles results include water that was present in the starting sample. By subtracting the moisture content of the sample, a value for the organic portion of the volatiles that would desorb to the air pollution control system of a LTTT process can be estimated.

Materials with high organic content pose significant problems for LTTT processes because of potential explosive environments, temperature control in the primary heating chamber due to heat release from oxidation of organics, and significant residuals management issues (ie., organic condensate and spent activated carbon) for specific process configurations.

Comparison of the soil analytical data to the current cleanup goals at the site revealed that all soil samples collected during the PMHS failed to meet the cleanup goals for one or more parameters. Table 3-5 provides a summary of the comparison to site cleanup goals. Four of the ten samples failed the cleanup goals for metal COCs. Lttt is not effective on soils that fail the cleanup goals for metal COCs. All but two of the soil samples would be classified as "Waste" materials due to PCB contamination. Spreadsheets (2 sheets per sample) comparing analytical results to specific cleanup goals are included in Appendix H.

### **3.3.2 Liquid Samples**

Liquid samples collected from accessible drums in Test Pits SA02 and SA04 were analyzed for volatiles, semivolatiles, pesticides/PCBs, total metals, total cyanides, ignitability, and paint filter test. The results of these analyses are summarized in Table 3-6. Sample SA04-O-02 had a high concentration of acetone (25%). Sample SA04-O-01 contains primarily benzene, toluene, ethylbenzene, and xylene (BETX) (70%).

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Sample SA02-O-01 had high metals concentrations. Sample SA02-O-02 had a high concentration of PCBs (650 mg/kg). All four samples were negative for ignitability and failed the paint filter test. Only one of the liquid samples (SA02-O-02) had a detectable concentration of total cyanides.

The liquid samples were also analyzed for higher heating value, chemical moisture (Karl Fischer analysis), ultimate analysis (moisture by weight loss, carbon, hydrogen, nitrogen, sulfur, total chlorine/chloride, ash and oxygen by difference) and volatile matter similar to the soil samples. Table 3-7 provides a summary of the results of these analyses. These results indicate a significant organic content (carbon, hydrogen, and oxygen), particularly samples SA02 and SA04. The heating values for these two samples are consistent with the high organic content. The Karl Fischer moisture results are not consistent with the remaining analytical results in that the summation of the Karl Fischer moisture and the total organics do not match the volatiles results. This is likely due to the difficulty of obtaining representative aliquots of samples containing immiscible liquids. The liquid samples also have significant concentrations of total chlorine/chloride (as high as 37,200 mg/kg for SA04-O-GAL-01) which is likely organic in nature.

### **3.4 AMBIENT AIR MONITORING**

A summary of the ambient air monitoring results is included as Table 3-8. The analysis of the background samples collected upwind and downwind of the site prior to initiation of intrusive activities showed the presence of acetone at a low concentration. Analysis of samples during intrusive activities showed the presence of several constituents in the air with a general trend of higher concentrations downwind compared to upwind. The only exception to the upwind-downwind trend is the samples collected on July 18, 1997. Inspection of the meteorological data indicated that the winds were light and variable on that day. The meteorological data collected at the site met station is summarized in Appendix I. Certificates of analyses from Quanterra Laboratories for the Summa canisters are also included in Appendix I.

As shown in Table 3-8, the results from the ambient air monitoring are orders of magnitude below the OSHA Permissible Exposure Limits (PELs) which are 8 hour time weighted average concentrations for occupational exposures. The size of open excavations during the PMHS activities were small relative to the potential size of open excavations during full-scale remedial activities. In addition, samples were collected 100 feet upwind and downwind with significant winds providing dilution. Measurements closer to the excavations on days with less wind would likely show significantly higher concentrations of VOC's in the ambient air. Therefore, the fugitive emission of VOC's would probably be greater during full-scale activities than was measured during the PMHS.

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## **4.0 MATERIAL QUANTITIES**

Implementing the ROD remedy at the ACS site would involve management and treatment (or disposal) of several materials. These materials include buried drums, contaminated debris, "Waste" soil, and contaminated soil (VOC, SVOC, and heavy metals). Historical remedial investigations and the PMHS have allowed identification of the major areas of contamination and provided an estimate of the lateral and vertical extent of contamination at the site. The purpose of this section is to develop an estimate of the quantities of these materials that would set maximum and minimum ranges for the quantities of each of these materials that must be managed. To allow easy reference of specific areas at the site, a 100 x 100 foot grid system has been applied to the site.

### **4.1 TOTAL MATERIALS INSIDE THE BARRIER WALL**

The entire site rests on top of a clay layer with an elevation of approximately 620 feet above MSL. Montgomery Watson has installed a barrier wall around the perimeter of the site that is placed into the clay layer to contain the migration of contaminants from the site. By estimating the average surface elevation in each 100 x 100 foot grid and subtracting the elevation of the clay layer, an average thickness (depth to clay layer) of the materials in each grid was estimated. Given the thickness of the grid and the grid dimensions, the total volume of material in each grid was calculated. Summation of the quantity of material in all the grids inside the barrier wall provides an estimate of the total volume of potentially impacted material. For grids bisected by the barrier wall, the fraction of the grid within the barrier wall was estimated. Table 4-1 provides a summary of these calculations segregated into On-site and Off-site Containment areas. Based on these estimates and calculations, the total volume of material inside the barrier wall and above the clay confining layer is approximately 339,000 yd<sup>3</sup> for the On-site area and 428,000 yd<sup>3</sup> for the Off-site area making a total of 767,000 yd<sup>3</sup> for the site.

### **4.2 TOTAL WASTE MATERIAL**

Not all of the material inside the barrier wall is buried waste. U.S. EPA developed a delineation of the lateral extent of buried waste at the site and presented it in a map dated February 23, 1994. Over the past three years, Montgomery Watson has modified that map as additional borings and test pits have been made on site. Focus has further modified the map to include sampling results from the PMHS. Figure 4-1 shows these areas.

To extract an estimate of the potential total volume of buried waste it is necessary to establish the upper and lower extent of buried material. The upper bound was easily established from the site contour map.

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The lower extent was developed from a review of the borings conducted during the RI and the Barrier Wall Alignment Investigation, and from the test pits excavated during the PMHS. In general, it was found that buried waste, debris and landfill refuse extend to an elevation of about 630 feet MSL. The potential volume of waste material in each grid was calculated by assuming that all soil between ground surface and the elevation of 630 feet MSL within the shaded area is waste. This volume was calculated by multiplying the total volume of material in each grid above elevation 630 feet MSL by the fraction of the grid estimated to contain waste (fourth column in Table 4-2). Summation of these waste volumes for all grids inside the barrier wall provides an estimate of the total potential volume of "waste" at the site of approximately 155,000 yd<sup>3</sup>. This volume includes drums, debris and soil. Table 4-2 contains a summary of these calculations broken down by the On-site and Off-site areas.

#### **4.3 BURIED DRUMS**

One of the primary objectives of the PMHS was to determine the lateral extent and upper vertical elevation of the drum disposal area in the Off-site Containment Area. The results of the drum investigation are summarized in Section 3.1. Given the ground surface elevation and depth to drums at each point, an estimate of the elevation at the top of drums for each point was generated. These elevations were summarized in Table 2-1. Based on historical soil boring information, Montgomery Watson identified several points and associated elevations that are likely to be the bottom of the drum disposal area in the region identified during the PMHS to contain drums. These data points are summarized in Table 4-3. Montgomery Watson used the data points for top, edge and bottom of drums to estimate the total volume of material bounded by these points. The volume of material bounded by these points was 736,700 ft<sup>3</sup> (27,285 yd<sup>3</sup>). The data used and the results of this evaluation are included in Appendix J.

This total volume of "drums" is actually a mixture of drums, drum carcasses, soil, and debris. To obtain an estimate of the potential total number of drums in the Off-site Containment Area, three factors had to be considered including:

- Void fraction if drums are optimally packed in the drum disposal area (i.e., end to end in a honeycomb pattern). The void fraction at the optimum packing density was calculated to be approximately 0.2 (See figure in Appendix J).
- The drum packing efficiency relative to the optimum packing arrangement was assumed to be 0.7 based on observations during test pit excavations.
- The volume of a drum was estimated to be 8.17 ft<sup>3</sup> (i.e., 34 inches tall and 23 inches in diameter).

Based on these factors and the total volume of the drum disposal area, the volume specifically associated with the drums is 412,552 ft<sup>3</sup> (15,280 yd<sup>3</sup>). Using the estimated volume of a single drum, the total volume

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of drums converts to a drum count of 50,000 drums present in the Off-site Containment Area. Table 4-4 shows how this quantity of drums was calculated. This quantity does not include drums that may be buried in the On-site Containment Area, nor does it consider the impact of crushed drums, pockets of sludge storage where drums may not be present, or the tanker truck that is reportedly buried somewhere in the Off-site Containment Area. These factors could potentially raise or lower the estimated number of drums buried at the site. The remaining volume within the drum area not occupied by drums ( $12,005\text{ yd}^3$ ) is assumed to be occupied by a mixture of soil and debris.

The exact contents of the drums are unknown, however, historical information and observations during the PMHS indicate the drums could contain the following:

- Organic liquids, both volatile and semivolatiles (alcohols, ketones, esters, chlorinated solvents, aromatics, aliphatics, and glycols)
- PCB's
- Solidified polymers
- Paint residues
- Still bottom residues from solvent recovery operations
- Sludges and semisolid materials.

Specific visual observations of drum contents during the PMHS were summarized in Section 3.1.

#### 4.4 DEBRIS

Based on observations during the PMHS and data from the screening tests, the debris fraction was estimated for each grid and included in Table 4-2. A volume of debris that potentially would be screened from processing of the waste materials was calculated by applying a debris fraction in each grid to the potential volume of waste in the grid. The debris fraction in Table 4-2 for grids in the Off-site Containment Area were based on quantified debris content and visual observations during the PMHS. The debris fraction in the On-site Containment Area has not been quantified. Historical information indicates the former Still Bottoms Pond in the On-site Containment Area was filled in with industrial debris. This area is shown on Figure 4-1. Since the debris fraction in this area has not been quantified, a debris fraction less than what was determined in the Off-site Containment Area was used in Table 4-2 to make a conservative calculation of the debris quantity in grids that are part of the On-site Containment Area. Based on these assumptions, the volume of debris estimated to be contaminated and require management is approximately  $52,000\text{ yd}^3$  which includes approximately  $43,000\text{ yd}^3$  from the Off-site Containment Area. The debris would be typical municipal landfill wastes, industrial debris or drum carcasses. These

materials would not be amenable to LTTT. In addition, steam cleaning would not be very effective on most of the debris at this site due to the porous nature of the debris. Photographs P16, P17, and P25 in Appendix A shows typical debris encountered during the PMHS.

#### 4.5 WASTE SOIL

The quantity of "waste" soil potentially amenable to treatment by LTTT technology was calculated by subtracting the volume of drums and debris from the total volume of waste materials. Table 4-5 provides a summary of the material quantities at the site based on all the calculations described in this section. The total volume of "waste" soil is estimated to be approximately 87,000 yd<sup>3</sup>. The mass of soil was calculated assuming an in-situ soil density of 1.5 tons/yd<sup>3</sup> and included on Table 4-5.

Several soil samples collected from soils near the clay layer in borings advanced during the installation of the barrier wall were analyzed using the immunoassay field screening analysis. The results of these analyses indicated a potential layer of PCB contaminated soil (i.e., greater than 10 mg/kg) near the clay layer between the On-site and Off-site Containment Areas (see Figure 4-1). This evaluation does not include these soils.

#### 4.6 CONTAMINATED SOIL

This evaluation excludes soils that are contaminated at concentrations in excess of the cleanup goals but are not "waste" as defined in Section 1.1.5. The ROD requires that these soils, called "contaminated soils", either be treated with ISVE or LTTT. Any soil meeting the criteria of a "contaminated soil" that is outside the regions defined as "waste" by Montgomery Watson would add to the total volume of soil that has to be managed. The remaining volume of material inside the barrier wall is approximately 612,000 yd<sup>3</sup> (see Table 4-5). Some portion of this volume of material will fail the cleanup goals and require management.

This evaluation assumes soils in the upper aquifer between the bottom of buried materials (ie, debris, drums and waste inside the barrier wall) and the clay layer are part of the upper aquifer. Therefore, these materials contain contaminated groundwater, but are not defined as waste material. The base of the buried waste is found at approximately elevation 630 feet MSL, so there is approximately 10 feet of the material in the upper aquifer below the buried waste and above the clay confining layer that is potentially contaminated.

Amendable  
to treatment  
87,000 yd<sup>3</sup>  
PCBs at  
clay peat

buried  
clay (62')  
630' BSL

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**4.7 METALS CONTAMINATED SOILS**

The ROD states that "isolated pockets of heavy metal contaminated soils greater than 500 mg/kg lead in both the On-site and Off-site areas will be excavated, treated by LTTT to remove VOC's and SVOC's, possibly immobilized to remove the hazardous characteristic for metals and sent off-site for disposal". Figure 4-1 shows the area currently assumed to contain metals contaminated soils based on data from past remedial investigations and the PMHS. The currently identified area is concurrent with areas that contain waste materials, therefore, under the ROD these soils would require thermal treatment prior to disposal off-site. The quantity of soil estimated to contain metals at concentrations in excess of the cleanup goal is approximately 41,000 yd<sup>3</sup> (see Table 4-2 and 4-5). Any "contaminated" soils that are also determined to contain metals concentrations in excess of the cleanup goal would increase this quantity.

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- Organic materials vaporized from the soil during processing by LTTT must be managed by destruction in an afterburner on-site or condensation and collection followed by off-site incineration. The cost impact of off-site disposal of residuals, as specified in the ROD, would be significant if the organic residuals are not destroyed in an afterburner on-site.

## **TABLES**

**Table 1-1. Cleanup Goals**

CARCINOGENIC COMPOUNDS		NONCARCINOGENIC COMPOUNDS	
Contaminant	Cleanup Goal (mg/kg)	Contaminant	Cleanup Goal (mg/kg)
<b>Volatiles</b>		<b>Volatiles</b>	
Tetrachloroethene	1.1	Acetone	2,400
Trichloroethene	5.3	2-Butanone	620
Styrene	1.7	Chlorobenzene	150
Benzene	1.0	Chloroethane	2,700
1,1-Dichloroethene	0.098	1,2-Dichloroethene (cis)	250
Carbon Tetrachloride	0.38	Ethylbenzene	1,300
Chloroform	9.5	4-Methyl-2-pentanone	630
1,2-Dichloroethane	0.64	Toluene	5,000
Methylene Chloride	6.2	1,1,1-Trichloroethane	2,300
1,2-Dichloropropane	0.42	Xylenes (mixed)	26,000
1,1,2-Trichloroethane	0.51		
1,1,2,2-Tetrachloroethane	0.28		
Vinyl Chloride	0.031		
<b>Semivolatiles</b>		<b>Semivolatiles</b>	
CPAHs	0.0026	Naphthalene	82
Cyclic Ketones	7.3	Di-n-butylphthalate	2,300
bis(2-Ethylhexyl)phthalate	1.1	1,2,4-Trichlorobenzene	16
Isophorone	7.2		
Pentachlorophenol	0.43		
2,4-Dinitrotoluene	0.044	<b>Pesticides/PCBs</b>	
bis(2-Chloroethyl)ether	0.027	Endosulfan I	0.63
Hexachlorobutadiene	0.36		
Hexachlorobenzene	0.018	<b>Metals (a)</b>	
n-Nitrosodiphenylamine	12.0	Antimony	15
2,6-Dinitrotoluene	0.044	Barium	2,600
1,4-Dichlorobenzene	2.4	Cadmium	51
		Chromium (VI)	1,400
<b>Pesticides/PCBs</b>		<b>Miscellaneous Groups</b>	
4,4'-DDD	0.12	Nitrogenated Benzenes	6.2
4,4'-DDT	0.088	n-Chain Alkanes	760
Aldrin	0.002	Branched Alkanes	770
gamma-BHC (Lindane)	0.046	Methyl Propyl Benzenes	490
alpha-BHC	0.0047	Halogenated Alkanes	2,300
beta-BHC	0.016	Dimethyl Ethyl Benzenes	1,300
4,4'-DDE	0.16	Non-Cyclic Acids	1,000
Heptachlor Epoxide	0.0033	Methylated Naphthalenes	85
PCBs (b)	10	Oxygenated Benzenes	1,200
		Diethyl Benzenes	1,300
		Propenyl Benzenes	320
		Ethyl Methyl Benzenes	4,900
		Cumulative Hazard Index (CHI)	< 1.0 (c)
<b>Notes :</b>		Lead (a)	500
a)	The ROD states that "isolated pockets of heavy metal contaminated soils greater than 500 mg/kg lead in both the On-site and Off-site areas will be excavated, treated by LTTT to remove VOC's and SVOC's, possibly immobilized to remove the hazardous characteristic for metals and sent off-site for disposal." It is assumed that this statement holds for soils contaminated with metals other than lead.		
b)	The excavation cleanup goal is 10 mg/kg. The cleanup goal for treated soil is 2 mg/kg.		
c)	CHI applies to detected non-carcinogenic contaminants of concern only and is calculated as follows:		

$$\text{CHI} = (C1/CG1 + C2/CG2 + C3/CG3 + Ci/CGi)$$

where :

CHI = Cumulative Hazard Index

Ci = Concentration of the ith detected contaminant of concern in the soil

CGi = Cleanup Goal for the ith contaminant of concern

**Table 2-1. Description of Locations Investigated During PMHS**

Location ID	Sample Number	Location Description	Photo Number
SA01	SA01-S-01, SA01-S-02	Test pit opened by Montgomery Watson during initial PMHS activities. Found mostly drum carcasses. Bright colored solid materials were encountered in this test pit and in trenches near this test pit.	None
SA02	SA02-S	Test pit opened by Montgomery Watson during initial PMHS activities. Drums containing free liquids were encountered. The test pit was reopened during activities directed by Focus to obtain samples of liquids in the drums and comingled soil.	P28, P29
SA03	None	Test pit was planned to be excavated during the PMHS. After excavation of other test pits indicated drums were likely to be encountered, this test pit was not fully opened. The soil was removed from the surface to determine the depth to the top of drums. No further excavation was conducted.	None
SA04	SA04-S, SA04-O-01, SA04-O-02	Test pit opened by Montgomery Watson during initial PMHS activities. Drums containing free liquids were encountered. The test pit was reopened during activities directed by Focus to obtain samples of liquids in the drums and comingled soil.	P30, P31
SA05	None	Test pit opened by Montgomery Watson during initial PMHS activities. No drums were encountered. Materials excavated from this test pit contained approximately 30% municipal debris based on visual estimates. Samples were not collected from this test pit.	P17, P18
D01	D01-S	Test pit excavated at edge of drums on southwest side of drum disposal area. The soils from this test pit were screened and sampled for analysis and treatability testing. The material excavated from this test pit contained approximately 32% municipal debris based on screening data.	P16
D02	D02-S	Test pit excavated at edge of drums on southeast side of drum disposal area. The soils from this test pit were screened and sampled for analysis and treatability testing. The material excavated from this test pit contained approximately 32% municipal debris based on screening data.	None
KP01	KP01-S	Test pit excavated at south end of site near the demolished Kapica - Pazmey drum recycling building. The soils from this test pit were screened and sampled for analysis and treatability testing. The material excavated from this test pit contained approximately 23 % drum carcasses to a depth of approximately 6 feet.	P19, P20, P21, P22, P23
SP01	SP01-S	This test pit was excavated from the northwest face of VOC/PCB spoil pile at the south end of site. This spoil pile resulted from excavation of soils at this end of the site during installation of the barrier wall. The material excavated from this test pit was screened and sampled for analysis and treatability testing. The material excavated from this test pit contained approximately 60% municipal debris based on screening data.	P05, P07, P08
SP02	SP02-S	This test pit was excavated from the southwest face of VOC/PCB spoil pile at the south end of site. This spoil pile resulted from excavation of soils at this end of the site during installation of the barrier wall. The material excavated from this test pit was screened and sampled for analysis and treatability testing. The material excavated from this test pit contained approximately 60% municipal debris based on screening data.	P05, P07, P08
ED Labels	T12-S	Point at edge of exploratory trenches that marks the approximate edge of buried drums.	P11 - P16
PE Labels	None	Point excavations conducted inside the drum disposal area to identify the depth from ground surface to the top of drums.	None

a) Photographs can be found in Appendix A.

Descript  
of  
~~Material~~  
Handels

**Table 2-2. ACS Site Pretreatment/Material Handling Study Sample Locations**

Sample Location ID	Coordinates		Surface Elevation	Depth to Top of Drums (ft)	Elevation at Top of Drums	Notes
	North	East				
<b>Test Pits (a)</b>						
SA01	6,049.0	5,240.5	647.9	3.0	644.9	Mostly drum carcasses; contains colored materials
SA02	5,977.0	5,309.3	647.3	2.0	645.3	Drums with free liquids
SA03	6,111.6	5,326.2	645.9	1.0	644.9	Located top of drums, no further excavation
SA04	6,259.4	5,352.9	645.7	2.0	643.7	Drums with free liquids
SA05	6,210.0	5,150.0	NM	NA	NA	No drums, approx. 30% municipal debris
D01 (b)	5,998.9	5,135.8	NM	NA	NA	Approx. 20% municipal debris.
D02 (b)	5,913.2	5,322.9	NM	NA	NA	Approx. 20% municipal debris.
KP01 (b)	5,668.9	5,249.4	NM	NA	NA	Drum carcasses mixed with soil
SP01 (b)	5,816.0	5,131.9	NM	NA	NA	Approx. 30% municipal debris.
SP02 (b)	5,725.9	5,129.5	NM	NA	NA	Approx. 30% municipal debris.
<b>Edge of Drums</b>						
ED-1	6,255.4	5,381.2	645.4	3.0	642.4	Approx. 30% municipal debris.
ED-2	6,275.4	5,364.3	646.2	3.0	643.2	Approx. 10% municipal debris.
ED-3	6,292.7	5,318.2	645.4	5.0	640.4	Approx. 5% municipal debris.
ED-4	6,275.2	5,250.1	646.1	8.0	638.1	Approx. 90% municipal debris.
ED-5	6,234.6	5,184.1	644.4	10.0	634.4	Approx. 60% municipal debris.
ED-6	6,008.4	5,156.6	643.6	3.0	640.6	Approx. 10% municipal debris.
ED-7	6,003.6	5,221.9	646.6	1.0	645.6	No debris.
ED-8	5,944.0	5,308.5	646.4	6.0	640.4	Approx. 40% municipal debris.
ED-9	6,082.1	5,164.5	644.8	2.0	642.8	Approx. 30% municipal debris.
ED-10	6,162.8	5,190.8	646.0	6.0	640.0	Approx. 50% municipal debris.
ED-11	6,052.7	5,379.2	643.9	2.0	641.9	No debris.
ED-12	6,152.6	5,403.4	643.6	3.0	640.6	No debris.
ED-13	6,121.4	5,402.7	642.3	1.0	641.3	Approx. 10% municipal debris.
ED-14	6,207.6	5,400.0	645.2	2.0	643.2	Drums encountered at crest of hill
<b>Point Excavations</b>						
PE-1	5,979.4	5,266.5	647.4	8.0	639.4	Approx. 30 ft. west of SA02.
PE-2	6,085.8	5,294.9	646.8	3.0	643.8	Approx. 30 ft. southwest of SA03.
PE-3	6,135.7	5,265.5	648.3	3.0	645.3	Approx. 60 ft. west of SA03.
PE-4	6,210.2	5,282.0	647.2	2.0	645.2	Approx. 100 ft. south of ED-03.

N/A - Not Applicable

NM - Not Measured

- a) Coordinates for test pits represent the center of the test pit.
- b) The coordinates listed for these test pits are approximate.

**Table 3-1. PMHS Screening Data Summary**

<b>Test Pit</b>	<b>Total Material Weight (lb)</b>	<b>Soil Weight (lb)</b>	<b>Debris Weight (lb)</b>	<b>Debris (wt %)</b>	<b>Screening Rate (tons/hr)</b>
D02	22,460	15,400	7,060	31.4	37.43
SP02	23,260	9,240	14,020	60.3	58.15
D01	36,320	24,480	11,840	32.6	90.80
KP01	20,220	15,580	4,640	22.9	50.55

**Notes:**

- a) Screening was also conducted on test grid SP01, however, data reduction for this test grid indicated errors made in the weight measurements (See Appendix E) rendering the screening data invalid for Test Pit SP01.

**Table 3-2. Summary of Organic Analytical Data from ACS Site Soil Samples**

Analyte	Sample Number	Concentration (mg/kg)									
		(a) D01-S	(a) D02-S	(a) SP01-S	(a) SP02-S	(a) KP01-S	(b) SA02-S	(b) SA04-S	(b, c) T12-S	(b) SA01-S-01	(b) SA01-S-02
<b>Volatile Organics (Method 8260A)</b>											
Acetone								1,200			
Benzene								45			
2-Butanone					240		520	170			28
Cis-1,2-Dichloroethene									0.14		
Ethylbenzene	52	19	710	830		680	300				
4-Methyl-2-Pentanone	15		410	500		360	110				
Tetrachloroethene	3.7		220	290		170	880	1.00	280		
Toluene	67	21	960	1,300	2.7	1,300	920	0.08	160		130
1,1,1-Trichloroethane								0.03			
Trichloroethene						160	350	1.10			
Xylene (Total)	320	100	5,000	5,500	62	3,600	1,600	0.80	280		10
<b>Semivolatile Organics (Method 8270B)</b>											
bis(2-Ethylhexyl)phthalate	120	55	230		130	240		9.30	40		15
Di-n-butylphthalate	79	11	82			84					
Isophorone	67		190			210					
Naphthalene	51	16	74			140					
<b>Pesticides and PCB's (Method 8081)</b>											
PCB's	28	20	68	73	127	125	330	5	14		9

**Notes:**

- a) Samples were taken from screened soil.
- b) Samples were grab samples.
- c) Sample T12-S was taken from Exploratory Trench #12.
- d) Only analytes reported are those detected in one or more samples. Empty cells indicate the analyte was not detected in the sample.

**Table 3-3. Summary of Metals Analytical Data from ACS Site Soil Samples**

Analyte	Sample Number	Concentration (mg/kg)									
		(a) D01-S	(a) D02-S	(a) SP01-S	(a) SP02-S	(a) KP01-S	(b) SA02-S	(b) SA04-S	(b) T12-S	(b) SA01-S-01	(b) SA01-S-02
Aluminum		8,230	3,930	3,570	3,070	5,210	3,210	5,720	2,670	3,780	3,900
Antimony		164		16	29		32			13	
Arsenic		4.1	7.8	3.0	3.5	4.9	4.2	5.9	2.3	3.5	3.8
Barium		2,690	222	282	417	232	1,120	170	31	1,210	63
Cadmium		106	8.0	21	32	11	41	3.1	0.8	2.2	2.0
Calcium		24,600	8,910	13,100	13,400	23,600	7,350	10,000	4,340	10,700	26,200
Chromium		1,480	111	225	360	161	551	57	14	753	10
Cobalt		33		8.4	9.1	11	22				5.6
Copper		1,130	269	155	136	75	1,320	295	748	72	36
Iron		19,200	8,730	5,700	5,400	9,140	7,780	13,500	3,760	18,600	7,110
Lead		10,200	603	986	1,760	822	2,490	294	60	4,190	147
Magnesium		5,880	3,800	5,190	4,870	11,300	1,280	4,220	1,430	4,540	11,600
Manganese		402	130	162	152	456	104	191	148	164	299
Mercury		0.8	0.8	3.9	6.4	2.9	7.9	0.3		1.0	0.4
Nickel		53	15	15	10	13	15	15	4.6	27	10
Potassium						1,040		659			1,610
Selenium		8.3	0.6	1.9	3.4	1.5	4.0				
Silver		35		2.5	2.9		3.8				
Sodium		1,170						744			
Vanadium		11	7.3	6.0		12		12	7.1	6.7	8.8
Zinc		8,290	339	718	628	306	894	7,260	185	374	101

**Notes:**

- a) Samples were taken from screened soil.
- b) Samples were grab samples.
- c) Only analytes reported are those detected in one or more samples. Empty cells indicate the analyte was not detected in the sample.

**Table 3-4. Summary of Elemental Analyses of Soil Samples**

Parameter	Units	Elemental Analysis Results							Average
		KP01-S	D01-S	D02-S	SP01-S	SP02-S	SA02-S	SA04-S	
Sample Number		KP01	D01	D02	SP01	SP02	SA02	SA04	
Test Pit		KP01	D01	D02	SP01	SP02	SA02	SA04	Average
Moisture (Karl Fischer - KF) (a)	wt%	15.83	14.35	10.98	17.09	12.01	12.53	15.45	14.0
Loss on drying at 221°F (b)	wt%	19.63	16.27	14.17	16.00	18.26	21.14	17.98	17.6
Total Carbon	wt%	3.79	4.28	2.53	4.49	6.18	8.82	5.30	5.1
Hydrogen (c)	wt%	1.09	0.82	< 0.1	< 0.1	1.06	2.96	0.17	0.7
Nitrogen	wt%	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Sulfur	wt%	0.21	0.10	0.11	0.09	0.11	0.09	0.07	0.1
Chlorine	mg/kg	36	350	290	1,100	4,800	2,900	1,700	1,597
Ash (932 °F, Air)	wt%	74.38	69.40	76.67	75.55	67.22	70.47	74.97	72.7
Oxygen (c, d)	wt%	4.70	11.02	9.68	2.67	12.94	4.84	3.87	7.1
Volatile (1,022 °F, N2 Purge)	wt%	23.57	24.96	17.25	22.16	27.48	24.53	21.12	23.0
Volatile (1,742 °F, N2 Purge)	wt%	25.62	30.44	22.89	24.10	31.78	28.33	24.90	26.9
Higher Heating Value	Btu/lb	408	698	286	844	2,105	1,666	952	994
Total Organics (e)	wt%	9.6	16.1	12.3	7.3	20.2	16.6	9.3	13.1
1,022 °F Volatiles - KF Moisture (f)	wt%	7.7	10.6	6.3	5.1	15.5	12.0	5.7	9.0
1,742 °F Volatiles - KF Moisture (f)	wt%	9.8	16.1	11.9	7.0	19.8	15.8	9.5	12.8

**Notes:**

- a) Determination of moisture content by a chemical analysis method.
- b) This analysis typically represents moisture content but cannot distinguish between moisture and volatile organics that desorb at this temperature.
- c) Hydrogen and oxygen were corrected for Karl Fischer moisture.
- d) Oxygen is calculated by subtracting total carbon, hydrogen, nitrogen, sulfur, chlorine, and ash from 100. Nondetects are equal to zero in this calculation.
- e) Summation of carbon, hydrogen and oxygen results.
- f) These values are representative of the organic matter desorbed at these temperatures in a nitrogen atmosphere.
- g) All results are reported on an "as received" basis.

**Table 3-5. Summary of Cleanup Goal Comparison**

Sample Number	Material Classification	"Waste" Parameters		Carcinogenic Constituents		Noncarcinogenic Constituents			CHI (b)	
		PCBs	Total VOCs	VOCs	SVOCs	Individual Constituents				
				VOCs	SVOCs	VOCs	SVOCs	Metals (a)		
D01-S-IEA	Waste	X		X	X			X	X	
D02-S-IEA	Waste	X			X			X		
KP01-S-IEA	Waste	X			X			X		
SP01-S-IEA	Waste	X		X	X			X	X	
SP02-S-IEA	Waste	X		X				X	X	
SA02-S-IEA	Waste	X		X	X		X	X	X	
SA04-S-IEA	Waste	X		X					X	
T12-S-IEA	Cont. Soil				X					
SA01-S-01-IEA	Waste	X		X	X			X	X	
SA01-S-02-IEA	Cont. Soil				X					

**Notes**

- a) Metals includes lead in addition to the four heavy metals with cleanup goals listed in the ROD (antimony, barium, cadmium and chromium).
- b) CHI - Cumulative Hazard Index
- c) X's indicate the parameter or one or more individual constituents in the contaminant group exceeded the cleanup goals.

**Table 3-6. Summary of Analytical Data for Liquid Samples from Drums**

Analyte	Sample Number	Concentration (mg/kg)			
		SA02-0-01	SA02-0-02	SA04-0-01	SA04-0-02
<b>Volatile Organics (Method 8260A)</b>					
Acetone	37,000				250,000
Benzene				89,000	
2-Butanone	14,000	13,000	64,000	19,000	
Chloroform				31,000	
Ethylbenzene	1,800	7,800	70,000		
4-Methyl-2-Pentanone	2,700	6,500			
Tetrachloroethene				47,000	
Toluene	4,900			260,000	
1,1,1-Trichloroethane				33,000	
Xylene (Total)	10,000			280,000	
<b>Semivolatile Organics (Method 8270B)</b>					
bis(2-Ethylhexyl)phthalate		7,200			
Di-n-butylphthalate		2,400			
Isophorone		4,900			
Naphthalene		3,400		12,000	
<b>Pesticides and PCB's (Method 8081)</b>					
PCB's		650			
<b>Metals (Method 6010)</b>					
Aluminum	26,000	472	177		
Antimony	168				
Arsenic	65	3.0			
Barium	2,720				
Cadmium	224	2.6			
Calcium	149,000				
Chromium	2,760	88	27		
Cobalt	262	10			
Copper	20,100	181	12		
Iron	200,000	1,090	5,960		
Lead	19,600	51	171		
Magnesium	9,130				
Manganese	1,440				
Mercury		2.8			
Nickel	334				
Selenium	17	3.7			
Sodium	13,000				
Zinc	12,800	76	1,120		
<b>Miscellaneous Analyses</b>					
Total Cyanides	< 1	2.37	< 1	< 1	
Ignitability	None	None	None	None	
Paint Filter Test	Positive	Positive	Positive	Positive	

**Notes:**

a) Only analytes reported are those detected in one or more samples. Empty cells indicate the analyte was not detected in the sample.

**Table 3-7. Summary of Elemental Analyses of Liquid Samples**

Parameter	Units	Elemental Analysis Results			
Sample Number		SA02-O-01	SA02-O-02	SA04-O-01	SA04-O-02
Test Pit		SA02	SA02	SA04	SA04
Moisture (Karl Fischer - KF) (a)	wt%	40.4	5.8	0.6	49.4
Total Carbon	wt%	22.4	70.3	78.7	30.9
Hydrogen (b)	wt%	6.8	9.7	10.7	5.4
Nitrogen	wt%	0.67	< 0.5	< 0.5	< 0.5
Sulfur	wt%	< 0.5	0.25	0.17	0.07
Total Chlorine/Chloride	mg/kg	12,600	10,400	37,200	242
Ash (932 °F, Air)	wt%	1.3	1.6	0.7	0.04
Oxygen (b, c)	wt%	27.2	11.3	5.4	14.2
Volatiles (1,742 °F, N2 Purge)	wt%	90.3	96.7	95.5	93.9
Higher Heating Value	Btu/lb	5,444	16,672	16,602	5,714
Total Organics (d)	wt%	65.3	78.7	83.7	80.3

**Notes:**

- a) Determination of moisture content by a chemical analysis method.
- b) Hydrogen and oxygen were corrected for Karl Fischer moisture.
- c) Oxygen is calculated by subtracting total carbon, hydrogen, nitrogen, sulfur, chlorine, and ash from 100. Nondetects are equal to zero in this calculation.
- d) Summation of carbon, hydrogen, total chlorine/chloride, and oxygen results.
- e) All results are reported on an "as received" basis.

**Table 3-8. Ambient Air Monitoring Results - ACS PMHS Report**

Analyte	Ambient Air Monitoring Results												OSHA Permissible Exposure Limits	
	Sampling Date		06/23/97		06/25/97		06/26/97		07/16/97		07/17/97		07/18/97	
Notes	(1)		(2)		(3)		(4)		(4)		(4) (a)			
Upwind (UW) or Downwind (DW) (b)	UW	DW	UW	DW	UW	DW	UW	DW	UW	DW	UW	DW		
1,1,2-Trichloro-1,2,2-trifluoroethane				3									1,000,000	
Acetone	4		15	39	18	360		19		98	11		1,000,000	
Methylene chloride			4	14	11	56	2	5		9			500,000	
cis-1,2-Dichloroethene						3							200,000	
2-Butanone				25		58				10			200,000	
Chloroform					3								50,000	
1,1,1-Trichloroethane					7	6	4		4		4		10,000	
Benzene					9	8	2		6		8		1,000	
Trichloroethene					7	7	6				7		100,000	
Toluene		4	52		46	72	5	18		31	19	6	200,000	
Tetrachloroethene				30	10	11	3	4		9	2	6	100,000	
Ethylbenzene					5	4	19		2		4	6	100,000	
Xylenes (total)					18	23	110	12	14	2	20	39	100,000	
Styrene							4						100,000	
4-Ethyltoluene					3	5	6	2			6	5	NA	
1,3,5-Trimethylbenzene							2				3	2	25,000 (c)	
1,2,4-Trimethylbenzene					3	5	8	3			12	8	25,000 (c)	

(1) Background Air Samples

(2) Samples were taken during excavation of Test Pits SA04 and SA05.

(3) Samples were collected during excavation of Test Pits SA01, SA02, SA03, and deeper excavation at SA05.

(4) Samples were taken during trenching, point excavations, and reopening of Test Pits SA02 and SA04.

**Notes:**

a) Wind direction was variable as evidenced by meteorological data collected on this date.

b) Samplers were stationed upwind and downwind of intrusive site activities.

c) NIOSH exposure limits.

d) Only analytes that were detected have been reported.

e) EPA Method TO14 was used on the referenced samples.

f) All results are reported in ppb by volume.

**Table 4-1. Calculation of Total Material Inside Barrier Wall**

Grid Number	Average Surface Elevation (ft)	(a) Depth to Clay (ft)	Fraction of Grid Inside Area and Barrier Wall		(b) Total Grid Material Above Clay Layer	
			On-site	Off-site	On-site (yd <sup>3</sup> )	Off-site (yd <sup>3</sup> )
A 17	647	27		0.2		2,000
A 18	647	27		0.1		1,000
B 7	637	17		0.1		630
B 12	638	18		0.1		667
B 13	640	20		0.5		3,704
B 14	642	22		0.8		6,519
B 15	643	23		0.8		6,815
B 16	645	25		0.8		7,407
B 17	645	25		1.0		9,259
B 18	648	28		0.4		4,148
C 5	636	16	0.2		1,185	
C 6	638	18	0.6		4,000	
C 7	638	18	0.5	0.5	3,333	3,333
C 8	638	18		1.0		6,667
C 9	635	15		0.8		4,444
C 10	634	14		0.8		4,148
C 11	640	20		0.9		6,667
C 12	642	22		1.0		8,148
C 13	644	24		1.0		8,889
C 14	644	24		1.0		8,889
C 15	644	24		1.0		8,889
C 16	645	25		1.0		9,259
C 17	646	26		1.0		9,630
C 18	650	30		0.4		4,444
D 4	635	15	0.4		2,222	
D 5	637	17	1.0		6,296	
D 6	638	18	1.0		6,667	
D 7	638	18	1.0		6,667	
D 8	638	18	0.2	0.8	1,333	5,333
D 9	638	18		1.0		6,667

**Table 4-1. Calculation of Total Material Inside Barrier Wall**

Grid Number	Average Surface Elevation (ft)	(a) Depth to Clay (ft)	Fraction of Grid Inside Area and Barrier Wall		(b) Total Grid Material Above Clay Layer	
			On-site	Off-site	On-site (yd <sup>3</sup> )	Off-site (yd <sup>3</sup> )
D 10	636	16		1.0		5,926
D 11	636	16		1.0		5,926
D 12	646	26		1.0		9,630
D 13	648	28		1.0		10,370
D 14	648	28		1.0		10,370
D 15	646	26		1.0		9,630
D 16	646	26		1.0		9,630
D 17	649	29		1.0		10,741
D 18	650	30		0.4		4,444
E 2	640	20	0.3		2,222	
E 3	637	17	0.7		4,407	
E 4	638	18	1.0		6,667	
E 5	640	20	1.0		7,407	
E 6	640	20	1.0		7,407	
E 7	638	18	1.0		6,667	
E 8	638	18	0.5	0.5	3,333	3,333
E 9	638	18		1.0		6,667
E 10	636	16		1.0		5,926
E 11	636	16		1.0		5,926
E 12	646	26		1.0		9,630
E 13	645	25		1.0		9,259
E 14	645	25		1.0		9,259
E 15	645	25		1.0		9,259
E 16	647	27		1.0		10,000
E 17	650	30		1.0		11,111
E 18	650	30		0.6		6,667
F 2	640	20	0.9		6,667	
F 3	640	20	1.0		7,407	
F 4	639	19	1.0		7,037	
F 5	635	15	1.0		5,556	

**Table 4-1. Calculation of Total Material Inside Barrier Wall**

Grid Number	Average Surface Elevation (ft)	(a) Depth to Clay (ft)	Fraction of Grid Inside Area and Barrier Wall		(b) Total Grid Material Above Clay Layer	
			On-site	Off-site	On-site (yd <sup>3</sup> )	Off-site (yd <sup>3</sup> )
F 6	640	20	1.0		7,407	
F 7	639	19	1.0		7,037	
F 8	638	18	1.0		6,667	
F 9	638	18	0.1	0.9	667	6,000
F 10	638	18		1.0		6,667
F 11	639	19		1.0		7,037
F 12	635	15		1.0		5,556
F 13	641	21		1.0		7,778
F 14	643	23		1.0		8,519
F 15	644	24		1.0		8,889
F 16	650	30		0.7		7,778
F 17	650	30		0.3		3,333
F 18	650	30		0.1		1,111
G 1	635	15	0.1		556	
G 2	636	16	1.0		5,926	
G 3	636	16	1.0		5,926	
G 4	638	18	1.0		6,667	
G 5	637	17	1.0		6,296	
G 6	639	19	1.0		7,037	
G 7	639	19	1.0		7,037	
G 8	638	18	1.0		6,667	
G 9	638	18	0.5	0.5	3,333	3,333
G 10	638	18		1.0		6,667
G 11	640	20		1.0		7,407
G 12	641	21		1.0		7,778
G 13	642	22		1.0		8,148
G 14	645	25		0.6		5,556
G 15	645	25		0.2		1,852
H 1	635	15	0.1		556	
H 2	636	16	1.0		5,926	

**Table 4-1. Calculation of Total Material Inside Barrier Wall**

Grid Number	Average Surface Elevation (ft)	(a) Depth to Clay (ft)	Fraction of Grid Inside Area and Barrier Wall		(b) Total Grid Material Above Clay Layer	
			On-site	Off-site	On-site (yd <sup>3</sup> )	Off-site (yd <sup>3</sup> )
H 3	636	16	1.0		5,926	
H 4	640	20	1.0		7,407	
H 5	638	18	1.0		6,667	
H 6	638	18	1.0		6,667	
H 7	638	18	1.0		6,667	
H 8	638	18	1.0		6,667	
H 9	638	18	1.0		6,667	
H 10	640	20	0.1	0.9	741	6,667
H 11	643	23		1.0		8,519
H 12	644	24		0.6		5,333
H 13	648	28		0.1		1,037
I 2	636	16	1.0		5,926	
I 3	637	17	1.0		6,296	
I 4	640	20	1.0		7,407	
I 5	639	19	1.0		7,037	
I 6	638	18	1.0		6,667	
I 7	638	18	1.0		6,667	
I 8	638	18	1.0		6,667	
I 9	638	18	1.0		6,667	
I 10	640	20	0.3	0.2	2,222	1,481
I 11	640	20		0.1		741
J 2	636	16	0.5		2,963	
J 3	636	16	1.0		5,926	
J 4	638	18	1.0		6,667	
J 5	639	19	1.0		7,037	
J 6	637	17	1.0		6,296	
J 7	639	19	1.0		7,037	
J 8	638	18	0.6		4,000	
J 9	639	19	0.1		704	
K 2	635	15	0.1		556	

**Table 4-1. Calculation of Total Material Inside Barrier Wall**

Grid Number	Average Surface Elevation (ft)	(a) Depth to Clay (ft)	Fraction of Grid Inside Area and Barrier Wall		(b) Total Grid Material Above Clay Layer	
			On-site	Off-site	On-site (yd <sup>3</sup> )	Off-site (yd <sup>3</sup> )
K 3	635	15	0.7		3,889	
K 4	638	18	1.0		6,667	
K 5	638	18	0.9		6,000	
K 6	637	17	0.5		3,148	
K 7	639	19	0.1		704	
<b>Totals</b>					<b>338,741</b>	<b>428,444</b>

**Notes:**

- a) Based on an average clay layer elevation of 620 ft.
- b) Based on 100 x 100 foot grid. Total Grid Material is calculated as follows:  

$$(\text{Depth to Clay}) \times (100) \times (100) \times (\text{Fraction of Grid Inside Area and Barrier Wall}) / 27$$
- c) Figure 4-1 shows the grids included in this evaluation.

**Table 4-2. Calculation of Contaminated Material Quantities By Grid**

Grid Number	Average Surface Elevation (ft)	(a) Depth of Waste Materials (ft)	(b) Fraction of Grid Containing Waste Materials	(c) Volume of Waste Materials (yd <sup>3</sup> )	(d) Debris Fraction	(e) Volume of Debris (yd <sup>3</sup> )	(f) Fraction of Grid Containing Metals	(g) Volume of Metal Contaminated Materials (yd <sup>3</sup> )
<b>ON-SITE CONTAINMENT AREA</b>								
C 5	636							
C 6	638							
C 7	638	8	0.1	296				
D 4	635							
D 5	637	7	0.7	1,815				
D 6	638	8	0.8	2,370				
D 7	638	8	0.9	2,667				
D 8	638	8	0.3	889				
E 2	640							
E 3	637							
E 4	638	8	0.4	1,185				
E 5	640	10	0.6	2,222				
E 6	640	10	0.4	1,481	0.1	148		
E 7	638	8	1.0	2,963	0.1	296		
E 8	638	8	0.6	1,778				
F 2	640							
F 3	640							
F 4	639	9	0.7	2,333				
F 5	635	5	0.6	1,111	0.4	444		

**Table 4-2. Calculation of Contaminated Material Quantities By Grid**

Grid Number	Average Surface Elevation (ft)	(a) Depth of Waste Materials (ft)	(b) Fraction of Grid Containing Waste Materials	(c) Volume of Waste Materials (yd <sup>3</sup> )	(d) Debris Fraction	(e) Volume of Debris (yd <sup>3</sup> )	(f) Fraction of Grid Containing Metals	(g) Volume of Metal Contaminated Materials (yd <sup>3</sup> )
F 6	640	10	1.0	3,704	0.4	1,481		
F 7	639	9	1.0	3,333	0.4	1,333		
F 8	638	8	0.4	1,185				
G 1	635							
G 2	636							
G 3	636							
G 4	638	8	0.1	296				
G 5	637	7	0.8	2,074	0.4	830		
G 6	639	9	1.0	3,333	0.4	1,333		
G 7	639	9	1.0	3,333	0.4	1,333		
G 8	638	8	0.1	296				
G 9	638							
H 1	635							
H 2	636							
H 3	636							
H 4	640							
H 5	638	8	0.1	296				
H 6	638	8	0.4	1,185	0.4	474		
H 7	638	8	0.7	2,074	0.4	830		
H 8	638							

**Table 4-2. Calculation of Contaminated Material Quantities By Grid**

Grid Number	Average Surface Elevation (ft)	(a) Depth of Waste Materials (ft)	(b) Fraction of Grid Containing Waste Materials	(c) Volume of Waste Materials (yd <sup>3</sup> )	(d) Debris Fraction	(e) Volume of Debris (yd <sup>3</sup> )	(f) Fraction of Grid Containing Metals	(g) Volume of Metal Contaminated Materials (yd <sup>3</sup> )
H 9	638							
I 2	636							
I 3	637	7	0.2	519				
I 4	640	10	0.1	370				
I 5	639							
I 6	638							
I 7	638							
I 8	638							
I 9	638							
I 10	640							
I 11	640							
J 2	636							
J 3	636	6	0.5	1,111				
J 4	638	8	0.1	296				
J 5	639							
J 6	637							
J 7	639							
J 8	638							
J 9	639							
K 2	635							

**Table 4-2. Calculation of Contaminated Material Quantities By Grid**

Grid Number	Average Surface Elevation (ft)	(a) Depth of Waste Materials (ft)	(b) Fraction of Grid Containing Waste Materials	(c) Volume of Waste Materials (yd <sup>3</sup> )	(d) Debris Fraction	(e) Volume of Debris (yd <sup>3</sup> )	(f) Fraction of Grid Containing Metals	(g) Volume of Metal Contaminated Materials (yd <sup>3</sup> )
K 3	635							
K 4	638							
K 5	638							
K 6	637							
K 7	639							
<b>OFF-SITE CONTAINMENT AREA</b>								
A 17	647						0.3	1,889
A 18	647						0.1	630
B 7	637							
B 12	638							
B 13	640							
B 14	642							
B 15	643	13	0.5	2,407	0.6	1,444		
B 16	645	15	0.8	4,444	0.6	2,667	1.0	5,556
B 17	645	15	1.0	5,556	0.6	3,333	1.0	5,556
B 18	648	18	0.3	2,000	0.6	1,200	0.3	2,000
C 8	638							
C 9	635							
C 10	634							
C 11	640							

**Table 4-2. Calculation of Contaminated Material Quantities By Grid**

Grid Number	Average Surface Elevation (ft)	(a) Depth of Waste Materials (ft)	(b) Fraction of Grid Containing Waste Materials	(c) Volume of Waste Materials (yd <sup>3</sup> )	(d) Debris Fraction	(e) Volume of Debris (yd <sup>3</sup> )	(f) Fraction of Grid Containing Metals	(g) Volume of Metal Contaminated Materials (yd <sup>3</sup> )
C 12	642	12	0.1	444	0.6	267		
C 13	644	14	0.2	1,037	0.6	622		
C 14	644	14	0.7	3,630	0.6	2,178		
C 15	644	14	1.0	5,185	0.6	3,111		
C 16	645	15	1.0	5,556	0.6	3,333	0.5	2,778
C 17	646	16	1.0	5,926	0.6	3,556	1.0	5,926
C 18	650	20	0.4	2,963	0.6	1,778	0.3	2,222
D 9	638							
D 10	636							
D 11	636	6	0.5	1,111	0.6	667		
D 12	646	16	1.0	5,926	0.6	3,556		
D 13	648	18	1.0	6,667				
D 14	648	18	1.0	6,667	0.3	2,000		
D 15	646	16	1.0	5,926	0.3	1,778		
D 16	646	16	1.0	5,926	0.3	1,778	0.2	1,185
D 17	649	19	1.0	7,037	0.2	1,407	1.0	7,037
D 18	650	20	0.4	2,963	0.2	593	0.3	2,222
E 9	638							
E 10	636							
E 11	636	6	0.1	222				

**Table 4-2. Calculation of Contaminated Material Quantities By Grid**

Grid Number	Average Surface Elevation (ft)	(a) Depth of Waste Materials (ft)	(b) Fraction of Grid Containing Waste Materials	(c) Volume of Waste Materials (yd <sup>3</sup> )	(d) Debris Fraction	(e) Volume of Debris (yd <sup>3</sup> )	(f) Fraction of Grid Containing Metals	(g) Volume of Metal Contaminated Materials (yd <sup>3</sup> )
E 12	646	16	1.0	5,926	0.3	1,778		
E 13	645	15	1.0	5,556	0.3	1,667		
E 14	645	15	0.8	4,444	0.3	1,333		
E 15	645	15	0.5	2,778	0.3	833		
E 16	647	17	0.6	3,778	0.3	1,133	0.3	1,889
E 17	650	20	0.7	5,185	0.2	1,037	0.3	2,222
E 18	650							
F 9	638							
F 10	638							
F 11	639							
F 12	635	5	0.3	556	0.3	167		
F 13	641	11	0.2	815	0.3	244		
F 14	643							
F 15	644							
F 16	650							
F 17	650							
F 18	650							
G 10	638							
G 11	640							
G 12	641							

**Table 4-2. Calculation of Contaminated Material Quantities By Grid**

Grid Number	Average Surface Elevation (ft)	(a) Depth of Waste Materials (ft)	(b) Fraction of Grid Containing Waste Materials	(c) Volume of Waste Materials (yd <sup>3</sup> )	(d) Debris Fraction	(e) Volume of Debris (yd <sup>3</sup> )	(f) Fraction of Grid Containing Metals	(g) Volume of Metal Contaminated Materials (yd <sup>3</sup> )
G 13	642							
G 14	645							
G 15	645							
H 10	640							
H 11	643							
H 12	644							
H 13	648							
Totals (On-site Containment Area)				44,519		8,504		0
Totals (Off-site Containment Area)				110,630		43,459		41,111
Grand Totals				155,148		51,963		41,111

**Notes:**

- a) Based on an estimated average elevation at the bottom of buried waste of 630 feet.
- b) Fraction of grid estimated to contain drums or soils contaminated with PCBs or VOC's. See Figure 4-1 for areas estimated to be contaminated based on current data and information.
- c) "Volume of Contaminated Material" is calculated as follows:  

$$(\text{Depth of Contaminated Materials}) \times (100) \times (100) \times (\text{Fraction of Grid Containing Contaminated Materials}) / 27$$
- d) Debris fractions are estimates of the debris content (volume fraction) of contaminated materials. The estimates are based on observations and screening data from the Pretreatment Material Handling Study.
- e) "Volume of Debris" is calculated as follows:  $(\text{Volume of Waste Materials}) \times (\text{Debris Fraction})$
- f) See Figure 4-1 for areas estimated to contain metal contamination based on current data and information.
- g) "Volume of Metal Contaminated Material" is calculated as follows:  $(\text{Fraction of Grid Contaminated With Metals}) \times (100) \times (100)$   

$$("Surface Elevation" - 630) \times (100) \times (100) \times (\text{Fraction of Grid Containing Metals}) / 27$$
- h) The north side of the railroad tracks was used as the demarcation line between the on-site and off-site areas.

**Table 4-3. Data Points Identifying Bottom of Drums (Offsite Containment Area - ACS Site)**

Sample Location ID	Coordinates		Surface Elevation	Depth to Bottom of Drums (ft)	Elevation at Bottom of Drums	Source of Information
	North	East				
SB03	6,229.1	5,242.6	647.0	18.0	629.0	Visual Estimate & Boring Log
SB04A	6,083.4	5,212.7	647.0	18.0	629.0	Visual Estimate & Boring Log
SB05	6,039.4	5,282.4	647.0	13.0	634.0	Visual Estimate & Boring Log
SB06	6,119.4	5,325.9	645.0	13.0	632.0	Visual Estimate & Boring Log
SB07	6,229.9	5,366.4	647.0	15.0	632.0	Visual Estimate & Boring Log
SB24(R)	6,267.9	5,318.2	646.6	18.0	628.6	Boring Log
SB25(R)	6,182.3	5,395.5	645.6	11.0	634.6	Boring Log
SB26(R)	6,151.7	5,289.4	647.2	16.0	631.2	Boring Log
SB27(R)	6,068.6	5,343.4	644.5	17.0	627.5	Boring Log
SB27(RR)	6,078.1	5,346.9	644.3	17.0	627.3	Boring Log
SB36	5,986.4	5,300.0	647.1	15.0	632.1	Boring Log
SB37	6,051.5	5,237.2	648.1	12.5	635.6	Boring Log
SB38	6,275.3	5,261.8	647.0	17.0	630.0	Boring Log
SB39	6,207.4	5,173.0	644.9	16.0	628.9	Boring Log

Reference: Boring logs from Warzyn RI Report

**Table 4-4. Drum Quantity Calculation - Off-site Containment Area**

Vt = Total Volume of Region Containing Drums (a)	736,700 ft <sup>3</sup>	27,285 yd <sup>3</sup>
X = Void Fraction @ Optimum Packing Density (b)	0.2	
F = Estimated Drum Packing Efficiency (c)	0.7	
Vd = Total Volume of Drums (d)	412,552 ft <sup>3</sup>	15,280 yd <sup>3</sup>
Dv = Volume of Individual Drum (e)	8.17 ft <sup>3</sup>	
N = Estimated Number of Drums in Region	50,496	
Sv = Estimated Soil Volume in Drum Region	324,148 ft <sup>3</sup>	12,005 yd <sup>3</sup>

**Notes:**

- a) Calculated using top and edge of drum data collected during the PMHS and bottom of drum data from past soil borings, auger probes and test pits. See Appendix J.
- b) Assumes drums are stacked end to end in a honeycomb pattern.
- c) This is the fraction of optimum. Based on visual observations during the PMHS.
- d) The total volume of drums is calculated as follows:  
$$Vd = (Vt)(1-X)(F)$$
- e) Based on a drum height of 34 inches and diameter of 23 inches. Assumes drums are not crushed.

**Table 4-5. Summary of Material Quantities - ACS Site**

Material Description	Volume of Materials			(a) Total Mass (tons)	Volume % of Total Waste	ROD Specified Disposal Mechanism
	On-site (yd <sup>3</sup> )	Off-site (yd <sup>3</sup> )	Total (yd <sup>3</sup> )			
Buried Drums (b)	463	15,280	15,743	(c)	10.1%	Off-site Incineration
Contaminated Debris	8,504	43,459	51,963	62,356	33.5%	Steam Clean, Off-site Disposal
"Waste" Soil (d)	35,552	51,891	87,443	131,165	56.4%	On-site Thermal Desorption
"Contaminated" Soil (e)	(f)	(f)	(f)	(f)	(f)	ISVE or On-site LTTT
Metals Contaminated Soil (g)	0	41,111	41,111	61,667	26.5%	Off-site Disposal (h)
Current Estimate of Total Waste Volume	44,519	110,630	155,149			
Remaining Material Inside Barrier Wall	294,222	317,814	612,036			
Total Material Inside Barrier Wall	338,741	428,444	767,185			

**Notes:**

- a) Mass estimates based on 1.2 tons/yd<sup>3</sup> for debris and 1.5 tons/yd<sup>3</sup> for soils.
- b) The volume of drums in the on-site area is based on an area that is 50' x 50' x 5' deep.
- c) The number of drums in the Off-site Containment Area is estimated at approximately 50,000. See Table 4-4.
- d) The volume of "waste" soil includes approximately 12,000 yd<sup>3</sup> of soil comingled with drums.
- e) Soils not meeting the criteria of a "waste" but in excess of the cleanup goals.
- f) The total volume of the remaining soil that would be classified as "contaminated soils" is unknown.
- g) The quantity of soil contaminated with metals is also included in other contaminated materials.
- h) Stabilization or solidification is required if metals contaminated soils exceed TCLP standards for metals.

## **FIGURES**

FIGURE 1. U.S. EPA MAP OF AREAS OF CONTAMINATION (AOCs) AT ACS NPL SITE AS REVISED ON THE BASIS OF THE PRE-DESIGN STUDIES.

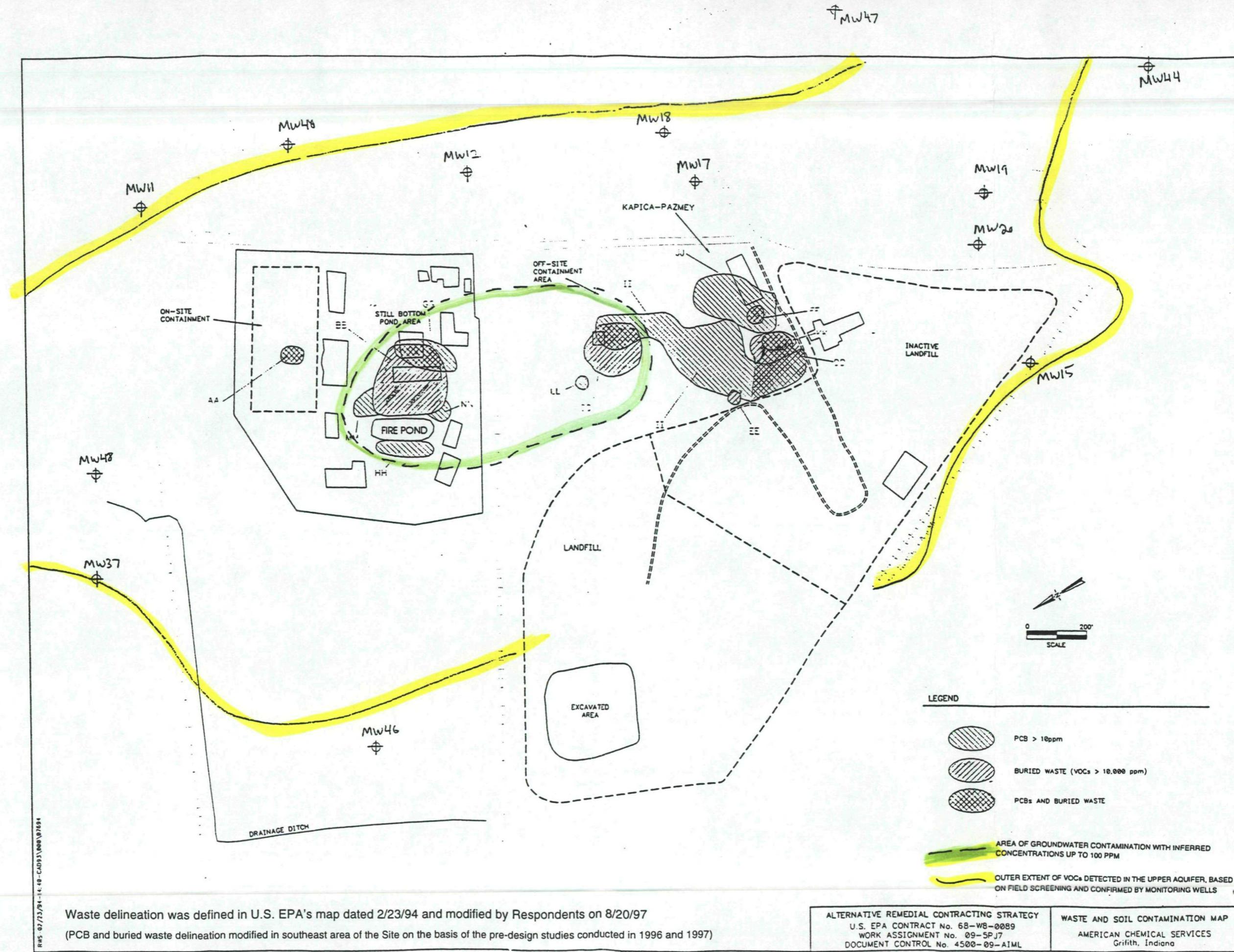


FIGURE 2. CONSTRUCTION AREAS AT THE ACS NPL SITE

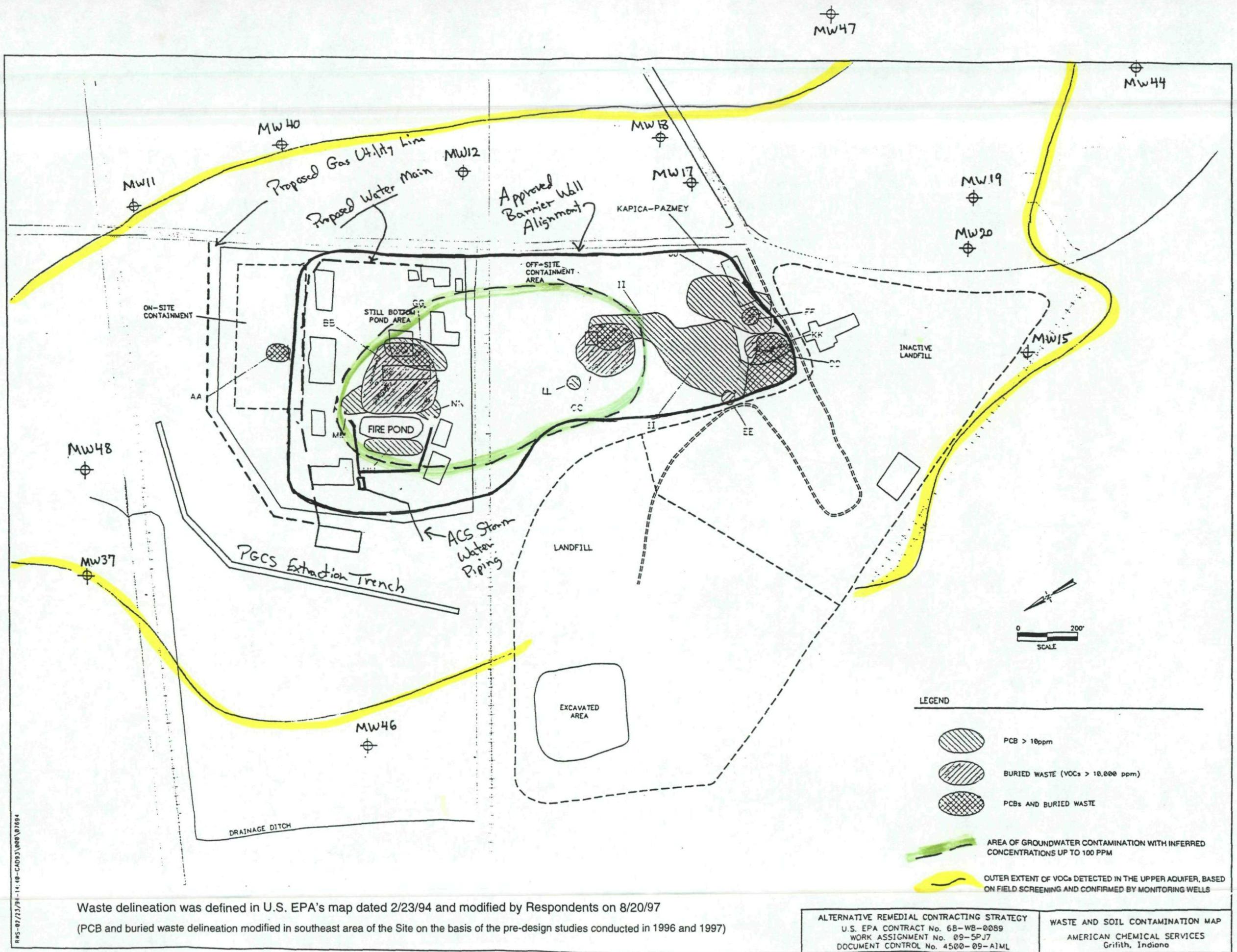


FIGURE 3. SPOILS MANAGEMENT AREAS AT ACS NPL SITE

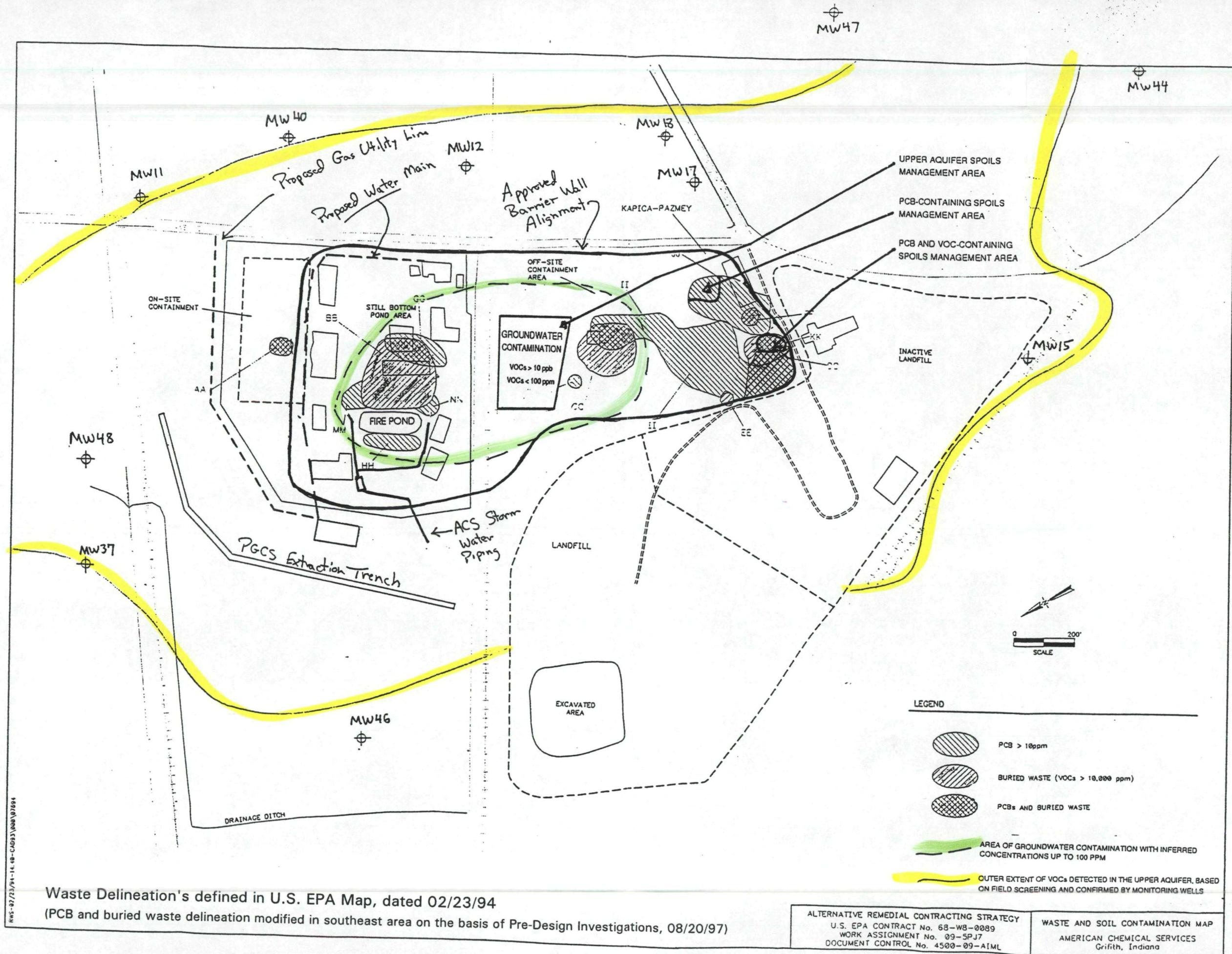
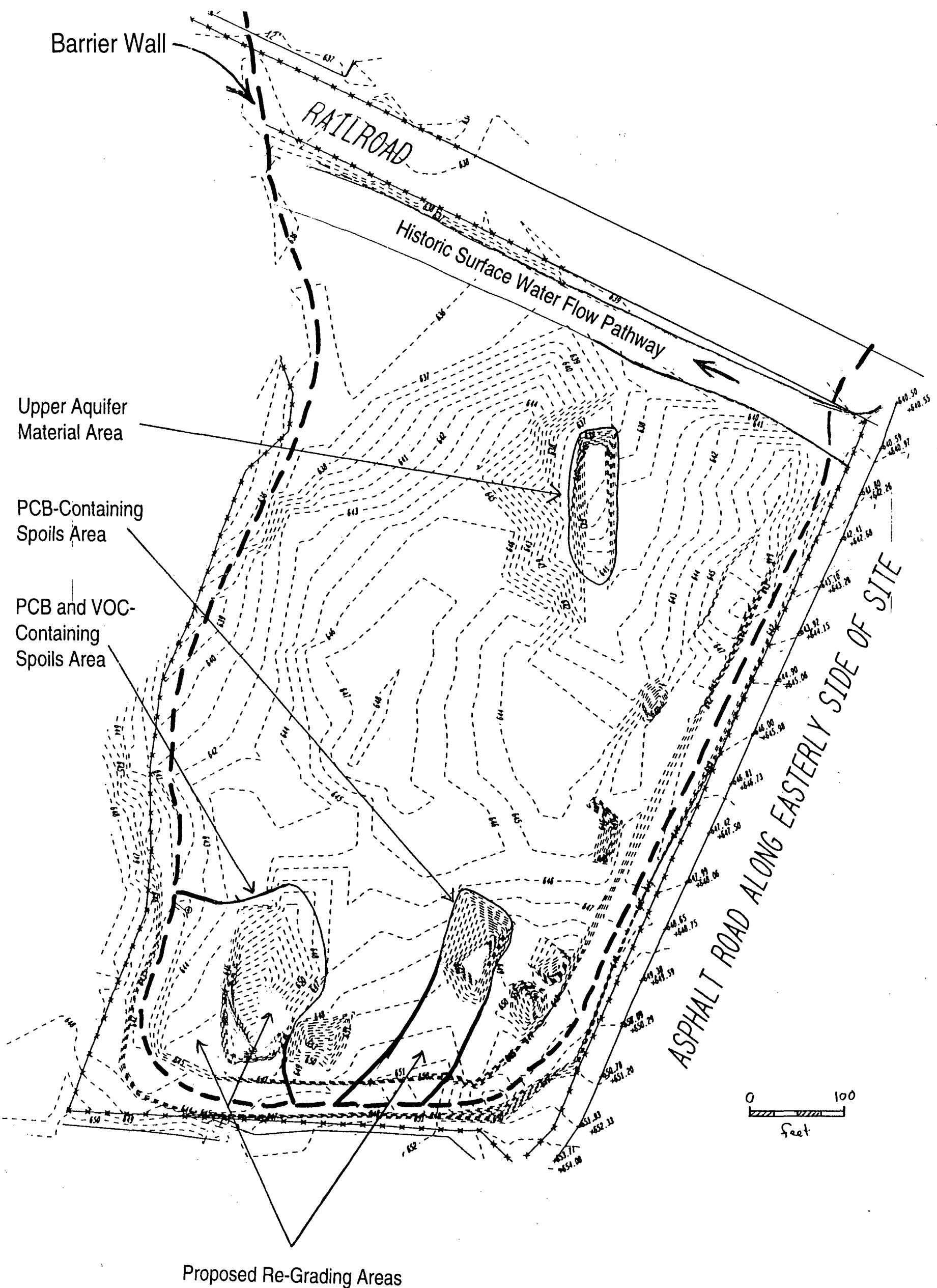
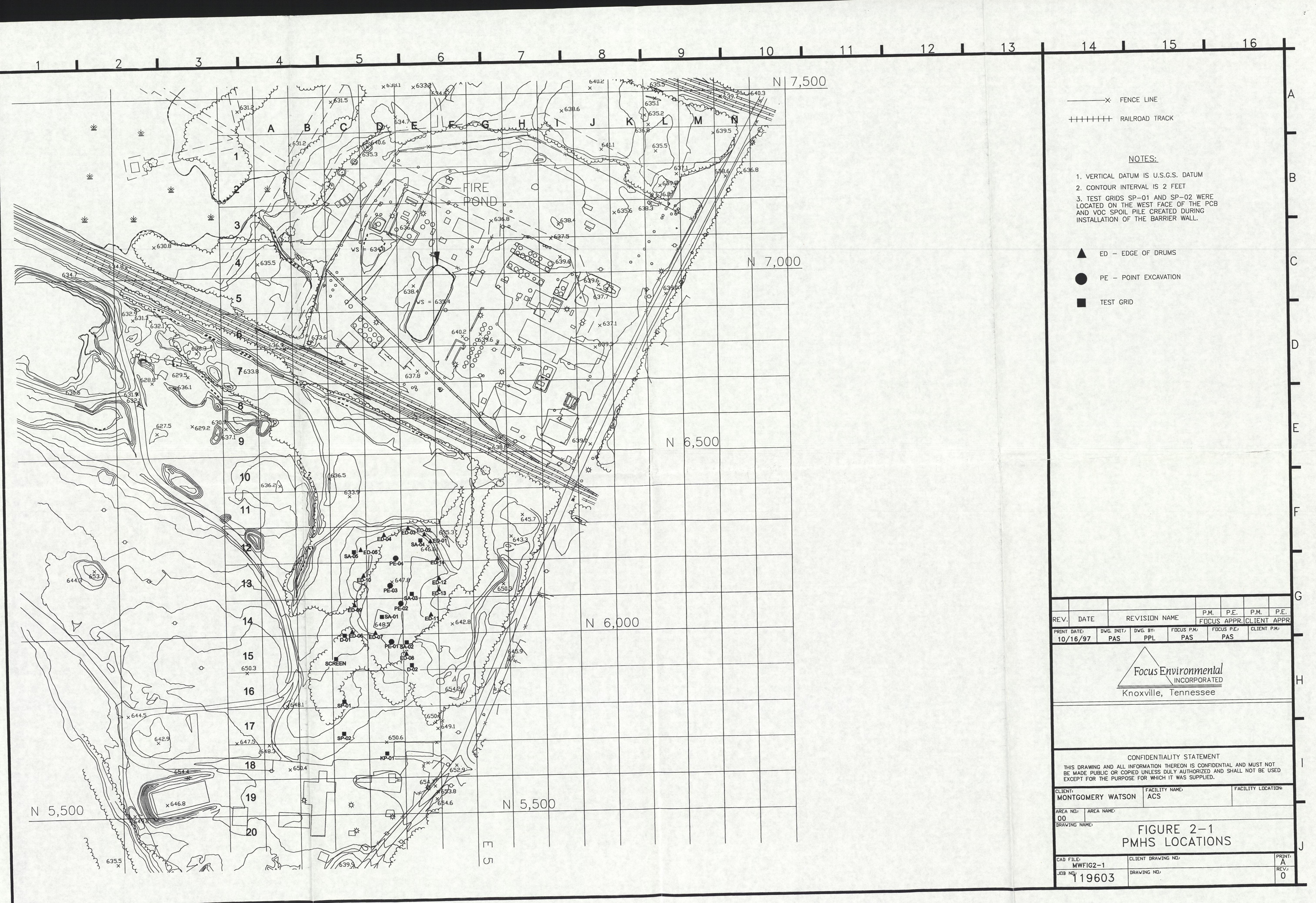
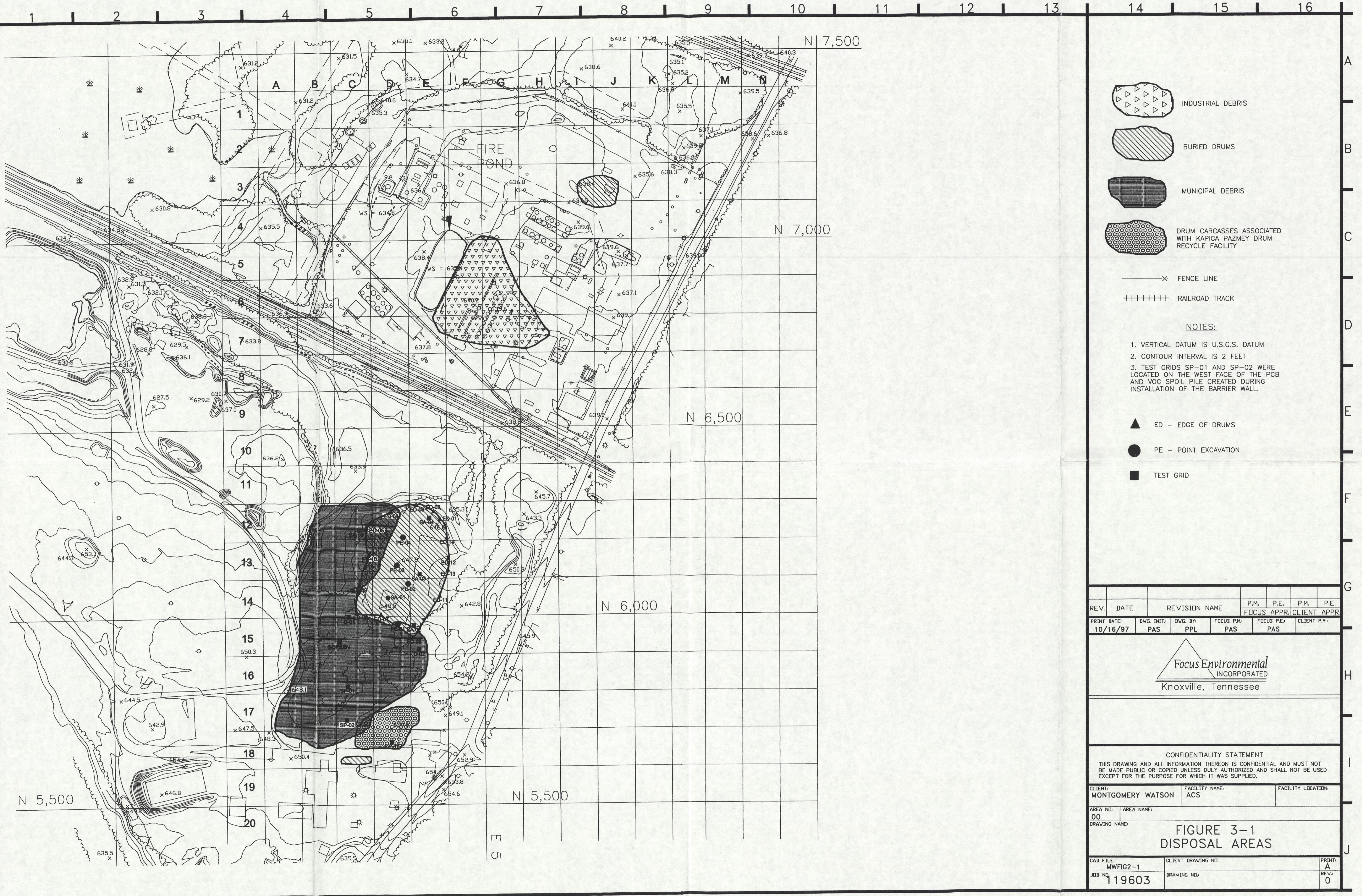
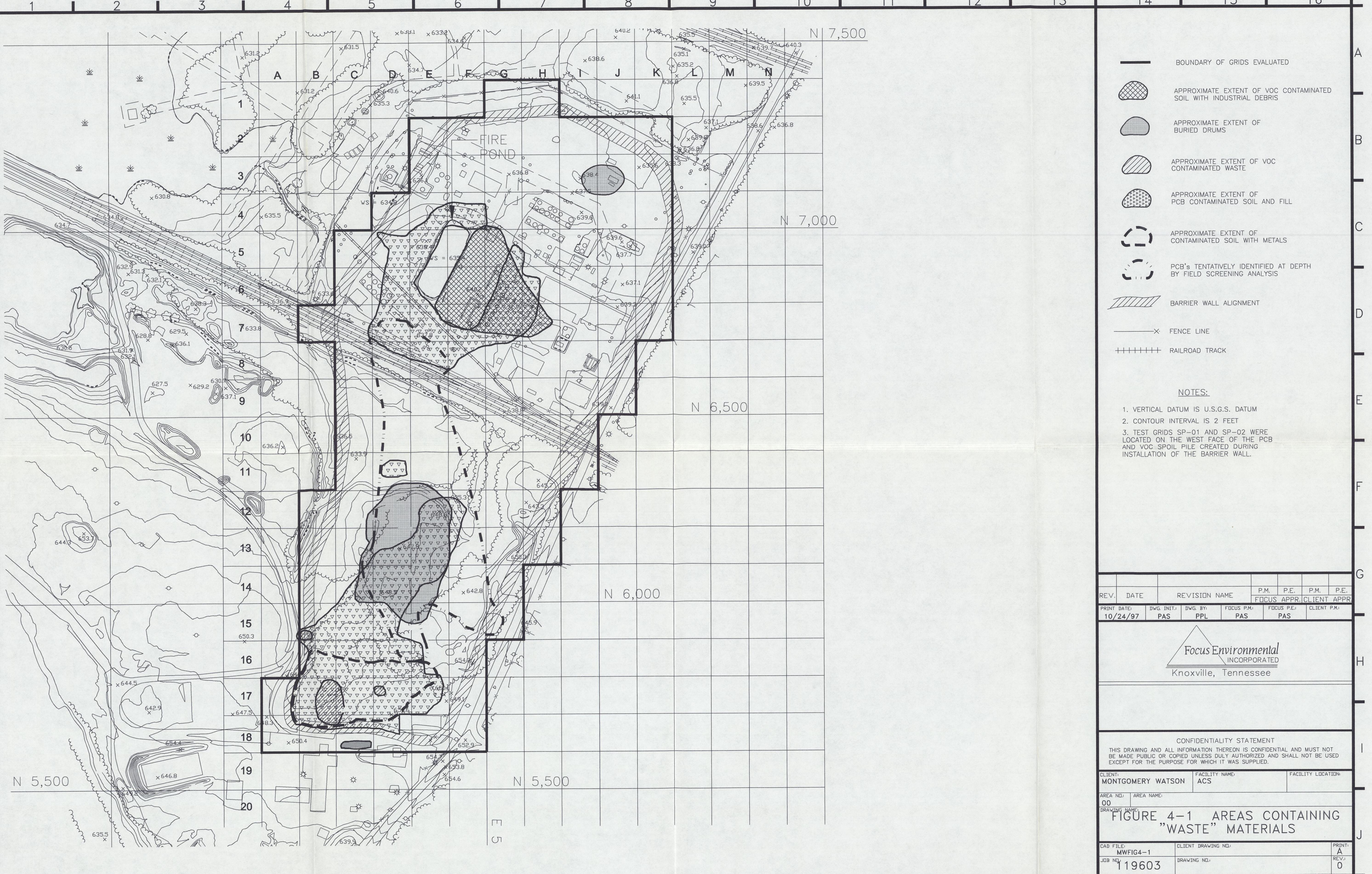


FIGURE 4. PROPOSED RE-GRADING TO MANAGE EROSION AND SURFACE WATER.  
(Elevation Survey data derived June 26, 1997)









**APPENDIX A**

**PHOTOGRAPHS**

## APPENDIX A - PICTURE INDEX

### American Chemical Services Site - Griffith, IN

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- P01 PCB Containing Spoils Management Area
- P02 PCB & VOC Containing Spoils Management Area containing soil and municipal refuse from excavation of materials during installation of the barrier wall at the south/southwest side of the off-site containment area. (Left Hand view looking southwest)
- P03 Right Hand View of Picture # P02 looking southwest
- P04 Miscellaneous Debris Management Area
- P05 View of Southeast side of PCB & VOC spoil pile
- P06 Demolition Debris from the Kapica/Pazmey Building. Located in southern part of site adjacent to the PCB & VOC spoil pile
- P07 View of the western side of the PCB & VOC spoil pile. Test Pits SP01 and SP02 were taken from this pile. The pile contains significant municipal debris.
- P08 Same description as for P07, different view.
- P09 Buried Drums On the Outside of the Barrier Wall
- P10 Picture of typical roadway at the site showing that municipal debris is essentially site wide.
- P11 Typical debris on west side of drum disposal area
- P12 Picture of material excavated while opening Exploratory Trench #4
- P13 Another picture of material excavated while opening Exploratory Trench #4
- P14 Drums excavated in Exploratory Trench #4. Liquid can be seen pouring from the bottom left end of the drum.
- P15 Another drum from Exploratory Trench #4 with obvious leaking liquid
- P16 Soil and debris excavated during Exploratory Trench #9. Representative of material found in Test Pit D01.
- P17 Soil and debris excavated from Test Pit SA05. No drums were encountered. Material contains significant municipal debris.
- P18 Picture of bottom and sides of Test Pit SA05.
- P19 Drum carcasses buried in the Kapica/Pazmey Area at south end of the site.
- P20 Another view of the drums carcasses in the Kapica/Pazmey Area
- P21 View of excavated Test Pit KP01 in the Kapica/Pazmey Area. Drum carcasses are visible. The sandy native soils can be seen at the bottom of the pit. The depth to the native soils was approximately 4 to 5 feet from ground surface.

## **APPENDIX A - PICTURE INDEX**

### **American Chemical Services Site - Griffith, IN**

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- P22 Soils and debris excavated from Test Pit KP01
- P23 Another view of soils and debris excavated from Test Pit KP01
- P24 Starting to screen soils and debris from Test Pit D01
- P25 Debris rejected from screening of materials from Test Pit D01
- P26 Soil produced from screened material from Test Pit D01
- P27 View of the barrier wall around the ACS Site
- P28 Pile of drums excavated from Test Pit SA02. Unknown white material oozing from a ruptured drum.
- P29 Picture of Test Pit SA02 during initial excavation.
- P30 Pile of drums excavated during reopening of Test Pit SA04.
- P31 Picture of Test Pit SA04 during initial excavation.







P05



P06



P07



P08



P09  
P09



P10



P11



P12





P15



P16





P19



P20





P23



P24



P25



P26



P27



Test Pit 2  
(SA 02)

P28



Test Pit SA02

P29



Test Pt 4  
(SA04)

P30



Test Pt. H  
(SAO4)

P31

**APPENDIX B**

**SITE LOGBOOK**

Planted numerous in drawings  
with top part of Montague  
tunneling around and through  
showing effects of each other

Tuesday, July 15/1997

Surf

(Nursery)

(This field also has the same soil  
as the one used in the tunnel  
but also contains some peat.  
Structure of the treated peat, drawn  
in the surface of the soil to the  
size of ACS peat size until  
the following were measured during  
the experiment course. Also, high  
(700 ppm) were contained in the  
treatment drawing without any  
treatment showing no difference  
drawing at the groundwater level  
therefrom showing PDI

Met Ben McGeehan at the  
groundwater treatment system  
at the site. Received site conditions  
and conducted a site walk.  
Dug several soil pits and buried  
well. Viewed drain collection  
in well of excavation in the  
area. Also viewed creek containing  
drainage, VDC/PCB spill area.  
Also viewed creek containing  
drainage, VDC/PCB spill area.  
Also viewed creek containing  
drainage, VDC/PCB spill area.  
Also viewed creek containing  
drainage, VDC/PCB spill area.  
Also viewed creek containing  
drainage, VDC/PCB spill area.  
Also viewed creek containing  
drainage, VDC/PCB spill area.  
Also viewed creek containing  
drainage, VDC/PCB spill area.

Monday, July 19, 1997

be included in the revised test plan being submitted to the EPA. Twila inventoried the sample containers for the coming Sampling activities to make sure we had what we needed. We still are waiting for the 5 gal metal containers which are supposed to come in tomorrow. Focus left the site about noon.

Paul Fackler

Wednesday 7/16/97

5

Met with Sherri Bianchini and Joe Adams at site to discuss EPA comments on revised work plan. Sherri gave approval to proceed after discussion and explanation of the goals and plan.

1130 am

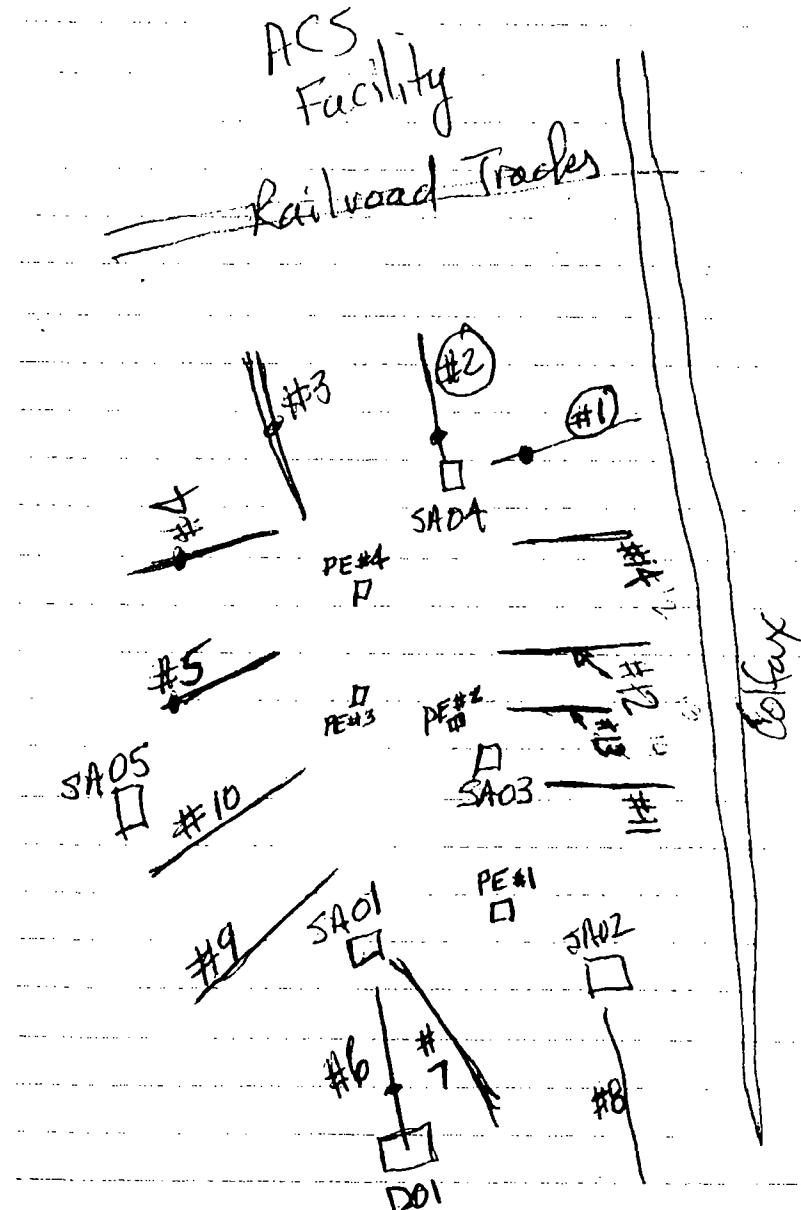
Began excavation of exploratory trench #1 (see figure on page 7). Began on the east side of the trench (east of Test Grid SA04) and progressed westward. Ran Encountered drum carcasses approximately 10' east of the eastern edge of Test Grid SA04 at a continued depth of 3 feet. Continued excavation and encountered intact drums with free liquid at approximately 5 feet in depth. Moved 5 feet east and dug to approximately 8 feet depth and found no more drums. Reached edge of drums with stake labeled ED #1. Encountered lots of municipal debris at edge and in cover material. Tires, carpet, metal debris (~30% debris).

1145 am

Began excavation of Exploratory trench #2. Started North of Test Grid SA04 and proceeded South toward SA04. Encountered dark soil comingled with Municipal refuse to depth of approximately 12 feet to within 5 feet of the ~~edge~~ northern edge of Test Grid SA04. Never encountered drums but knew from previous excavation at SA04 that drums were present at north edge of SA04. Staked edge of drums at 3 feet from north edge of SA04. Labeled Stake ED #2.

1210

Started Exploratory Trench #3 approximately 50 feet west of Trench #2. Encountered ~~Began~~ at toe of hill on North side and proceeded South. Encountered drum carcasses at



approximately 3 feet depth. Continued digging and encountered intact drums at approximately 5 feet depth approximately 10 feet from north toe of slope. Moved approximately 5 feet north and dug to approximately 10 feet and encountered drums. Stopped excavation at steep toe of bank and staked edge of drums labeled ED #3. Only 5% debris.

1220

Began excavation at Exploratory Trench #4. Lots of municipal debris (approximately 90% debris). Debris included tires, fruit packing materials, tree branches, wire and wood. Encountered one intact drum at approximately 8 feet depth. Continued digging and found other intact drums containing free liquid. Very fluid liquid with relatively clear appearance. Covered drums and moved west to see if drums

were deeper west of located drums. Material would be very difficult to screen and yield relatively little thermally desorbable material. Drums were encountered at approx. 10 feet at the new western location. Moved another 10 feet west and excavated deeper to see if drums were present. Lots of Municipal refuse continuous in overburden throughout Trench #4. At approximately 8 feet encountered predominately soil to a depth of approximately 15 feet. Closed the hole and staked the edge of drums. Labeled stakes as ED #4. at middle excavation point.

1545

Began excavation of Exploratory Trench #5. Dug 10-12 feet and hit drums. Material above drums was soil with significant debris content (municipal debris at approximately 60% debris). Moved West approximately 10 feet and

excavated to 10-12 feet and encountered drums again. Moved west another 15 feet roughly parallel to the spoil pile from Test Grid SA05 and approximately 20 feet north of the spoil pile. Discontinued excavation until later period of time.

1530

Began excavation of Exploratory Trench #6 working Southwest of Test Grid SA05 (Started approximately 10 feet Southwest of test grid). Encountered drums at approximately 3 feet depth. Some distinct discoloration in the soils (some purple and green). Moved southwest approximately 15 feet and encountered more drums at 2 feet. No discoloration and no apparent volatile organics. Moved southwest another 15 feet.

Encountered drums at 1 foot depth. No liquid. No discoloration. Moved Southwest another 15 feet.

Encountered drums at approximately 6 feet. Free liquid present. Liquid was dark sludge material with an oily appearance. Moved southwest another 15 feet.

Encountered black discolored soils from 3 feet down to approximately 12 to 15 feet. I (Paul Spadler) decided to leave the pit open for screening tomorrow. PID reading near pit was 10 ppm. Reading was 5 ppm at 30 feet from the pit. This will be grid D01.

Sherri asked for PID readings at the fence line today and randomly tomorrow (Thursday).

Placed stake at last location where drums found and labeled ED #6.

Paul Spadler

12

Thursday, July 17, 1997

Arrived at site @ 0630 hours.  
Twice organized sample containers.  
Met Pete Vagt of MW at the site.  
Reviewed planned activities for  
the day.

0745

Began excavating KPO1. Lots  
of drum carcasses (approximately  
00% debris). Went to bottom of  
carcasses (~6 feet) and  
stopped.

0830

Began excavating Exploratory  
Trench #7. Started approximately  
5 feet south of SA01. Found  
drums at surface. Moved south  
approximately 10 feet and found drums  
at surface. Moved south another 10  
feet and dug to a depth of approx.  
12 feet. No drums and encountered

13

sand (virgin soil) at the bottom.  
Closed trench and staked the  
end of drums approximately  
30 feet south of SA01. Labeled  
the stake ED#7.

0900

Began excavating Exploratory  
Trench #8 approximately 10 feet  
south of Test Grid SA02.  
Encountered significant municipal  
debris (approximately 40%).  
Ran into drums at approximately  
6 feet depth. Covered hole back  
up and moved south approximately  
15 feet. Encountered sand at  
approximately 8 feet. No drums.  
Filled hole back in and staked  
the end of drums. Labeled Stake  
as ED#8.

0930

Began excavating Exploratory Trench #9 approximately 50 feet NW of Test Grid SA01. Encountered drums at approximately 3 feet depth. No debris in over boulder. Moved SW approximately 15 feet and encountered drums at approximately 3 feet depth. One drum contained an epoxy type material. Operator was directed to dig further to make sure other drums were there. The bucket punctured a drum and free liquid squirted up in the hole. Covered back up and moved SW another 15 feet. Encountered drums at approx. 2 feet. Moved SW approx. 15 feet. Encountered municipal debris at this location (~30% debris). Dug to a depth of approximately 12 feet and encountered something solid. Pulled up a tank (~500 gal) below water table. Depth was ~15 feet. No more drums. Closed hole and staked as ED #9.

15

0900

Began screening soil and debris from Test Grid DO1. Collected a composite sample from the pile prior to screening for PCB screening analysis. Screen used is a VIPER 120 with a 4 inch rough screen and a 2 inch final screen. Grab samples of the screened soil were taken with a shovel and composited to form one screened soil sample. HNU reading was 150 ppm at soil surface. Material was placed back in DO1 hole.

#### DATA

See data summary attached to PMHS report

PAS  
8/27/97

1035

Began digging Test Grid D02 at outside edge of drums at end of Trench #9. Dug to approximately 8 feet and stopped.

1100

Opened Test Grid SA02 to collect organic and soil samples. The first organic sample (SA02-O-LAB-01) was a liquid sample that resembled water in its consistency. The second sample (SA02-O-LAB-02) was a dark sludge like liquid with a sticky nature. It was very difficult to clean from the outside of the bottles using paper towels. There was insufficient sample collected of the second liquid to fill all bottles, therefore, the sample to the TSDF was eliminated. Another sample material collected of the second material was composited together and

distributed into the remaining sample bottles. Samples of the commingled soil were collected from the pit and composited in a 5 gallon bucket. Soil under the drums representing virgin soil was collected and a shovel full added to the soil composite. The sample was blended and specific containers were filled. Representatives of Waste Management ~~H&H~~ and Ross Incineration were present to view the material excavated.

1100

Screening of Test Grid KPO1 was started. Screening was completed just prior to lunch (1220).

DATA

See data summary attached to PMHS report

Paul Sadler  
8/27/97

20

21

~1500

Started screening Test Grid  
SA-D02.

See data summary  
attached to PMHS report

Paul Sadler  
8/27/97

v1400

Initiated reopening of Test Grid SA04. Collected liquid samples from leaking drums. First sample was a dark free flowing liquid with a reddish color. The sample was labeled SA04-O-"LAB"-01. The second sample was a clear yellowish liquid and was labeled SA04-O-"LAB"-02. An attempt was made to take a sample of a gray rubbery type material that was squeezed from a drum. The material could not be penetrated with a shovel so no sample was taken. The material would vibrate and wiggle like jello when touched. The representative from West Management was present when SA04 was reopened. The hole was closed at approximately 1500.

1530

Continued excavation of exploratory trench #5. Dug to a depth of approximately 15 feet at a point due north of the SA05 spoil pile. No drums were encountered. Closed the hole and staked the end of drums. Labeled ED #5.

1600

Began excavation of exploratory trench #10. Overburden was approximately 50% soil and 50% municipal debris. Dug to a depth of approximately 8 feet at a location of approximately 15 feet Southeast of the SA05 spoil pile and encountered drums.

Appeared to be drum carcasses and very little free liquid. No attempt was made to dig any deeper. Backed up 15 feet and dug to a depth of 20 feet. No drums. Staked trench

for end of edge of drums.  
Labeled Stake as ED #10.

1655

Initiated excavation of Exploratory Trench #11 starting approximately 30 feet South East of Test Grid SA03. Encountered intact drums with free liquid at approximately 2 feet depth. Moved 15 feet east. Encountered drums at approximately 3 feet depth. Moved east another 15 feet. Dug to 8 feet and no drums were encountered. Marked edge of drums. Labeled Stake as ED #11.

Friday July 18, 1997

0730.

Began excavation of Exploratory Trench #B approximately 30 feet south of the edge of drum stakes for Trench #12. Encountered drums at 1 foot depth. Moved east approximately 15 feet and encountered drums at 1 foot depth. Moved east 15 feet. Dug to a depth of approximately 8 feet and found no drums. Staked the edge of drums (due south of ED #12 approximately 30 feet) and labeled the stake ED #13,

0745

Reopened soil excavation around ED #12 and collected a soil sample for PCB analysis; and potential use as a treatability sample depending on result of PCB analysis.

0815

Began excavating exploratory trench #14. Started at first toe of embankment and encountered drums at approximately 2 feet. Stopped the excavation and staked the edge of drums. Stake was labeled ED #14.

0820

Reopened SA01 to collect samples of colored material checking for high metal content. Found purple and collect solid material that would

Crumble when pressed. Also found green, red and yellow solids. Mixed all the materials together and formed a sample labeled SA01-01. Encountered <sup>most</sup> Some of the colored materials were obtained from Trench #7. Also encountered a drum containing a cream colored creamy material. A sample of this material was collected and labeled SA01-02.

0910

Began excavating "Point Excavations" (PE) at various locations to determine if drums are present and if so at what depth. This will assist in verifying continuity of drums within the edge of drum locations determined by the trenching and the

Quantity of overburden that would have to be removed.

#### PE #1

Located approximately 30 feet west of Test Grid SA02. Encountered drums at approximately 8 feet depth. Staked the location and labeled PE #1.

#### PE #2

Location is 30 feet South west of Test Grid SA03. Encountered drums at a depth of 3 feet. Staked the point excavation and labeled the stake PE #2.

#### PE #3

Located approximately 60 feet west of SA03. Encountered drums at a depth of 3 feet.

Staked the excavation and  
labeled PE #3,

PE #4

Began excavation of Point  
Excavation #4 located  
approximately 100 feet south  
of ED #3. Encountered  
drums at a depth of 2  
feet. Staked the excavation  
and labeled PE #4.

Screening of SPOT - Data

See data summary  
attached to PMHS report

Paul Sadler  
8/21/97

52

## Screening of Soil - SPO2 - Data

See data summary  
attached to PM HS report

Paul Sadler  
8/21/97

## HNU Readings from Screened Soil Peak Readings

D01	200
KP01	50
D02	100
SPO1	180
SPO2	100

**APPENDIX C**

**CHAIN OF CUSTODIES**



**IEA**  
An Aquarion Company

**3000 WESTON PKWY.  
CARY, N.C. 27513  
PH # 919-677-0090  
FAX # 919-677-0427**

# **CHAIN OF CUSTODY RECORD**

**NO. 83643**

**REGULATORY CLASSIFICATION - PLEASE SPECIFY**

NPDES    DRINKING WATER    RCRA    OTHER \_\_\_\_\_

STATE CERT. SPECIFY \_\_\_\_\_

Focus Environmental, Inc.  
Knoxville, TN

Page 1 of 1

REQUESTED PARAMETERS																		
119603	American Chemical Services Site			# OF CONTAINERS	MATRIX			Pesticides/RB's	Total Metals	Mercury	Bromide	Fluoride	Iodide	Total Cyanides	Sulfides	Flash Point	TCLP for VOC's + SVOC's	Paint F/Test
SAMPLERS (PLEASE PRINT)	SIGNATURE				SOIL	WATER	OTHER											
Paul Sadler Twila Carlson	Twila Carlson			3			X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	
SAMPLE ID (20 CHARACTER MAXIMUM)	DATE	TIME	COMP.	3			X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	
SA04-0-IEA-01	7/17			2			X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	
SA04-0-IEA-02	7/17			2			X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	
SA02-0-IEA-01	7/17																	
SA02-0-IEA-02	7/17																	
(These are all non-refrigerated samples)																		
RECEIVED BY SIGNATURE	DATE	TIME	RECEIVED BY	DATE	TIME	IEA QUOTE NO.	IEA PROJECT NO.											
Twila Carlson	7/19	AM																
RECORDED BY SIGNATURE	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME	PROJECT MANAGER (PLEASE PRINT)	P.O. NO.											

#### **REMARKS ON BAMP E EQUATION**

[View Details](#)

**FREE MARKS / COMMENTS**

BOTTLE INTACT  
 PRESERVED  
 CHILLED

- CUSTODY SEALS
- SEALS INTACT
- SEE REMARKS

**RECEIPT TEMPERATURE=**

Where 3 containers are indicated there will be 2, 1/2  
jars + 1, 1L jar sent. Where 2 containers are  
indicated: 1, 1/2 jar, 1, 1L jar.  
(3 shipping containers total covered in this box)

## CHAIN OF CUSTODY RECORD

NO. 83642

## REGULATORY CLASSIFICATION - PLEASE SPECIFY

 NPDES    DRINKING WATER    RCRA    OTHER \_\_\_\_\_ STATE CERT. SPECIFY \_\_\_\_\_

Page 1 of 1

Focus Environmental, Inc.  
Knoxville, TN

119603 American Chemical Services Site

SIGNATURE

Paul Sadler  
Twila Carlson

Twila Carlson

## REQUESTED PARAMETERS

#	CONTAINERS	SOIL	WATER	OTHER	VOC'S	SVOC'S	Pesticides/PCBs	Total Metals	Mercury
---	------------	------	-------	-------	-------	--------	-----------------	--------------	---------

DO2-S-IEA	7/17	X	2	X	X	X	X	X	
SA04-S-IEA	7/17	X	2	X	X	X	X	X	
DO1-S-IEA	7/17	X	2	X	X	X	X	X	
KP01-S-IEA	7/17	X	2	X	X	X	X	X	
SA02-S-IEA	7/17	X	2	X	X	X	X	X	
T12-S-IEA	7/18	X	2	X	X	X	X	X	
SA01-S-IEA-02	7/18	X	1	X	X	X	X	X	
SA01-S-IEA-01	7/18	X	2	X	X	X	X	X	
SP01-S-IEA	7/18	X	2	X	X	X	X	X	
SP02-S-IEA	7/18	X	2	X	X	X	X	X	

IEA QUOTE NO.

IEA PROJECT NO.

Twila Carlson	7/19 AM	PROJECT MANAGER (PLEASE PRINT)	P.O. NO.

RECEIPT TEMPERATURE=

For all Sample ID's where 2 containers were listed, a 4 oz and a 1 Liter were sent. This covers for 2 coolers of Samples.

- BOTTLE INTACT
- CUSTODY SEALS
- PRESERVED
- SEALS INTACT
- CHILLED
- SEE REMARKS

L I Corp Development Laboratory



3000 WESTON PKWY  
GARDEN CITY, NY 10533  
PHONE # 914-577-4000  
FAX # 914-577-0227

# CHAIN OF CUSTODY RECORD

REGULATORY CLASSIFICATION - PLEASE SPECIFY

NO. 83645

Focus Environmental  
Knoxville, TN

- NPDES    DRINKING WATER    RCRA    OTHER \_\_\_\_\_  
 STATE CERT. SPECIFY \_\_\_\_\_

Page 1 of 1

119603 American Chemical Services Site

SAMPLERS (PLEASE PRINT)

Paul Sadler  
Twila Carlson

SIGNATURE

Twila Carlson

SAMPLE ID# (20 CHARACTERS MAXIMUM)

DATE

TIME

#	CONTAINERS OF	MATERIAL	SOIL	WATER	OTHER	Treatability Test	REQUESTED PARAMETERS										
							1	2	3	4	5	6	7	8	9	10	
D02-S-ITC	7/17	X	1	X		X											
SA04-S-ITC	7/17	X	1	X		X											
D01-S-ITC	7/17	X	1	X		X											
SA02-S-ITC	7/17	X	1	X		X											
KP01-S-ITC	7/17	X	1	X		X											
SP01-S-ITC	7/18	X	1	X		X											
SP02-S-ITC	7/18	X	1	X		X											
T12-S-ITC	7/18	X	1	X		X											

Please await further instructions from Paul Sadler, Focus Environmental, Inc.

(423) 694-7517

REMOVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME	IEA QUOTE NO.	IEA PROJECT NO.
Twila Carlson	7/19	AM					

## REMARKS ON SAMPLE RECEIPT

## IEA REMARKS

## FIELD REMARKS / COMMENTS

- BOTTLE INTACT    CUSTODY SEALS  
 PRESERVED    SEALS INTACT  
 CHILLED    SEE REMARKS

RECEIPT TEMPERATURE=

Samples are packaged in individual 5 gal metal drums.

GALBRAITH LABS

3000 WESLEY Pkwy.  
CARTERSVILLE, GA 30121  
PH# 000-822-0090  
FAX# 800-377-0427



An Envirocon Company

## CHAIN OF CUSTODY RECORD

NO. 83644

## REGULATORY CLASSIFICATION - PLEASE SPECIFY

- NPDES    DRINKING WATER    RCRA    OTHER  
 STATE CERT. SPECIFY

COMPANY INFORMATION

Focus Environmental  
Knoxville, TN

Page 1 of 1

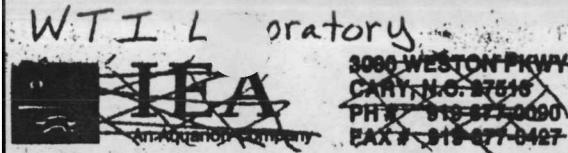
PROJECT NUMBER		PHONE NUMBER			REQUESTED PARAMETERS												
119603	American Chemical Services Site	#	CONTAINERS	SOIL	WATER	OTHER	Lignite proximate	Heat Content	Karl Fischer Moisture								
SAMPLERS (PLEASE PRINT)		SIGNATURE	OF														
Paul Sadler Twila Carlson		Twila Carlson															
SAMPLE ID (PRINT CLEARLY IF MATERIAL)		DATE	TIME														
SA02-O-GAL-01		7/17				X	X	X	X								
SA02-O-GAL-02		7/17				X	X	X	X								
SA04-O-GAL-01		7/17				X	X	X	X								
SA04-O-GAL-02		7/17				X	X	X	X								
KPO1-S-GAL		7/17			X		X	X	X								
D02-S-GAL		7/17			X		X	X	X								
SA02-S-GAL		7/17			X		X	X	X								
SA04-S-GAL		7/17			X		X	X	X								
D01-S-GAL		7/17			X		X	X	X								
SP01-S-GAL		7/18			X		X	X	X								
SP02-S-GAL		7/18			X		X	X	X								
RECEIVED BY		RECEIVED BY		RECEIVED BY		RECEIVED BY		RECEIVED BY		RECEIVED BY		RECEIVED BY		RECEIVED BY		IEA QUOTE NO.	IEA PROJECT NO.
Twila Carlson		7/19 AM															
RECEIVED BY SIGNATURE		RECEIVED BY SIGNATURE		RECEIVED BY SIGNATURE		RECEIVED BY SIGNATURE		RECEIVED BY SIGNATURE		RECEIVED BY SIGNATURE		RECEIVED BY SIGNATURE		RECEIVED BY SIGNATURE		PROJECT MANAGER (PLEASE PRINT)	P.O. NO.

- BOTTLE INTACT  
 PRESERVED  
 CHILLED

- CUSTODY SEALS  
 SEALS INTACT  
 SEE REMARKS

RECEIPT TEMPERATURE=

Samples were packed in 3 separate shipping containers.  
All samples are 8oz jars.



3000 WESTON PKWY.  
CARTERSVILLE, GA 30121  
PHONE: 770-377-0090  
FAX: 770-377-0427

# CHAIN OF CUSTODY RECORD

NO. 83646

## REGULATORY CLASSIFICATION - PLEASE SPECIFY

NPDES    DRINKING WATER    RCRA    OTHER \_\_\_\_\_

STATE CERT. SPECIFY \_\_\_\_\_

Page 1 of 1

Focus Environmental  
Knoxville, TN

PROJECT NUMBER		PROJECT NAME		REQUESTED PARAMETERS															
119603		American Chemical Services Site		#	CONTAINERS	SOIL	WATER	OTHER											
SAMPLERS (PLEASE PRINT)		SIGNATURE																	
Paul Sadler Twila Carlson		Twila Carlson																	
SAMPLE ID	COLLECTOR'S NAME	DATE	TIME																
SA02-0-WTI-01		7/17			1			X											
SA04-0-WTI-02		7/17			1			X											
SA04-0-WTI-01		7/17			1			X											
Please await further instructions from Paul Sadler, Focus Environmental, Inc. (423) 694-7517																			

RECEIVED BY				RECEIVED BY				IEA QUOTE NO.		IEA PROJECT NO.	
Twila Carlson		7/19	AM								
PROJECT NUMBER				PROJECT NAME				PROJECT MANAGER (PLEASE PRINT)		P.O. NO.	

PACKAGING SAMPLES				REMARKS/COMMENTS											
<input type="checkbox"/> BOTTLE INTACT		<input type="checkbox"/> CUSTODY SEALS		RECEIPT TEMPERATURE=				All Samples are 1 L jars each packaged as single shipments (5 gal metal drums). (Non-refrigerated)							
<input type="checkbox"/> PRESERVED		<input type="checkbox"/> SEALS INTACT													
<input type="checkbox"/> CHILLED		<input type="checkbox"/> SEE REMARKS													

**APPENDIX D**

**FIELD PCB SCREENING RESULTS  
IMMUNOASSAY TESTING**

**Table 1**

**Summary of Ohmicron PCB Immunoassay Test Kit Analyses  
July 17 and 18, 1997  
ACS Superfund Site**

Soil Sample	Total PCB Concentration (ppm)
D01	36.2
D01 Duplicate	35.9
SA02	33.1
SA04	37.3
D02	19.3
KP01	29.4
SP01	36.5 <sup>(1)</sup>
SP02	>112.9 <sup>(1)</sup>
SA01-01	>51.9 <sup>(1)</sup>
Trench #12	15.5 <sup>(1)</sup>

(1) Proper Q.C. not included in the run, results are estimated (see data narrative).

Project: ACS  
Project Number: 1252042

Re: Ohmicron Test Kit Results

Between the dates July 17 and 18, 1997, Ohmincron immunoassay PCB test kits were run on soil samples collected for viability of low temperature thermal desorption at the ACS Superfund site. This narrative has been included to ammend results of the last set of samples run on July 18, 1997. Due to the amount of separate runs completed during the two days, analyses run for the afternoon samples on July 18, 1997 (run #3) could not be run with the proper Q.C. protocols. Normally, two calibration standards are run for each level, proficiency samples are analyzed at the end of each run, and a control sample is analyzed to provide Q.C. Run #3 had only one standard prepared for each calibration level and no proficiency samples were analyzed. Also, there was a finite quantity of reagents available to perform the analyses. Therefore, a slightly lower volume of reagent was added to each standard and sample than what was called for in the standard operation procedure. The standards and samples were both analyzed with restricted volume of PCB enzyme conjugate. A control sample was analyzed with the run which also received a restricted volume of PCB enzyme conjugate. The control sample percent recovery was 96% indicating that the quality of the data is acceptable. Two of the sample results indicated PCB concentrations over the standard calibration range. Since a restricted volume of enzyme conjugate was used, the results should be considered as estimated.

Mark D. Pauli  
Associate Hydrogeologist  
Montgomery Watson

SUBJECT: OHMICRON IMMUNOASSAY TEST KIT RESULTS

• RUN #1

PROJECT: ACS  
PROJECT NUMBER: 1252042  
DATE: 7/17/97

\*\*\*\*\* OHMICRON \*\*\*\*\*

RUN#1:

ROTTOCOL : PCB

ECH ID : Mark Paul  
OT # : TE1704  
XP DATE: 12/97

ata Reduct:Lin.Regession  
formation: Ln/LgtB  
ead Mode : Absorbance  
avelength : 450 nm  
nits : PPB

QUATION OF LINE :

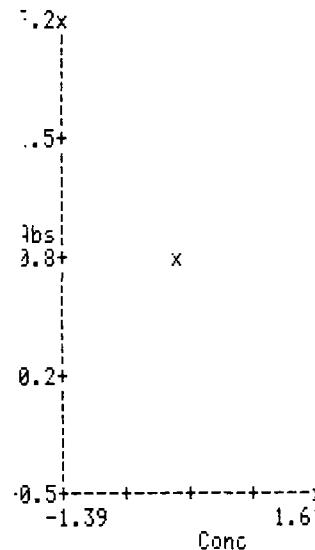
lope = -0.911  
ntercept = 0.918  
corr (r) = 0.9992

nsformed Data :

Conc	Abs
-1.39	2.214
0.00	0.856
1.61	-0.519

Librator Data:

Conc	Abs	%CV	Predic
	Diff		%Diff
0.00	0.648		
	0.666		
Mean	0.657	1.9	
0.25	0.588	0.26	
	0.011	4.3	
	0.597	0.22	
	-0.029	-13.1	
Mean	0.592	1.1	0.24
	-0.009		-3.7
1.00	0.476	0.95	
	-0.053	-5.6	
	0.446	1.20	
	0.205	17.0	
Mean	0.461	4.6	1.07
	0.071		6.6
5.00	0.266	4.18	
	-0.816	-19.5	
	0.224	5.64	
	0.638	11.3	
Mean	0.245	12.0*	4.84
	-0.156		-3.2



ontrol Data :

#	Abs	Conc	ACTUAL
1	0.325	2.80	3.0 ppm

: CONTROL SAMPLE 93% RPD

MPLES Data :

#	Abs	Conc	RPD %
1	0.287	3.62	36.2 ppm
2	0.288	3.59	35.9 ppm
3	0.718	nd	
4	0.543	0.50	0.33-0.68
5	0.356	2.29	1.28-3.20

: PROFICIENCY A 1.28-2.13

: PROFICIENCY B 2.13

: PROFICIENCY C 4.80

SUBJECT: OHMICRON IMMUNOASSAY TEST KIT RESULTS

• RUN #2

PROJECT: ACS  
 PROJECT NUMBER: 125204Z  
 DATE: 7/18/97

Please Wait 30 Minutes  
 -18-97 07:11:41

## RUN #2

-18-97 08:49:24

\*\*\*\*\* OHMICRON \*\*\*\*\*

OTOCOL : PCB

CH ID : MARK PAUL

T # : 3E1304

P DATE: 12/97

Method Reduct:Lin.Regression  
 Formation: Ln/LgtB  
 Read Mode : Absorbance  
 Wavelength : 450 nm  
 Units : PPB

## SITUATION OF LINE :

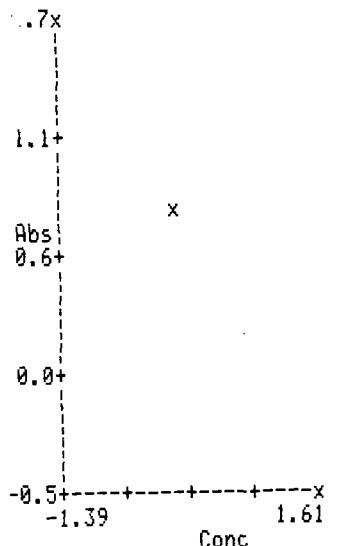
Slope = -0.753  
 Intercept = 0.719  
 Corr (r) = 0.9969

## Transformed Data :

Conc	Abs
-1.39	1.708
0.00	0.822
1.61	-0.540

## ibrator Data:

Conc	Abs	%CV	Predic
Diff			%Diff
.00	0.848		
	0.834		
Mean	0.841	1.2	
-25	0.733	0.20	
-0.045	-0.045	-22.0	
0.691	0.691	0.34	
0.091	0.091	26.8	
Mean	0.712	4.1	0.27
	0.019		7.1
.00	0.668	0.43	
-0.568	-0.568	-131.5	
0.500	0.500	1.56	
0.560	0.560	35.9	
Mean	0.584	20.3*	0.87
-0.128	-0.128	-14.6	
5.00	0.316	5.11	
0.107	0.107	2.1	
0.303	0.303	5.56	
0.556	0.556	10.0	
Mean	0.310	2.8	5.33
0.722			



## Control Data :

Conc	Abs	Conc
3.0	0.390	3.15

105%  
 : CONTROL 3.0ppb  
 Actual

## IMPROVEMENTS Data :

Conc	Abs	Conc
3.1	0.382	3.31

: SA02 PPM

Conc	Abs	Conc
3.73	0.364	3.73

: SA04 PPM

Conc	Abs	Conc
1.93	0.467	1.93

: DO2 PPM

Conc	Abs	Conc
2.94	0.401	2.94

: KPO1 PPM

Conc	Abs	Conc
0.35	0.689	0.33

: PROFICIENCY A 0.68

Conc	Abs	Conc
1.40	0.517	1.28

: PROFICIENCY B 2.13

Conc	Abs	Conc
3.37	0.380	3.20

: PROFICIENCY C 4.80

SUBJECT: OHMICRON IMMUNOASSAY TEST KIT RESULTS

• RUN #3

PROJECT: ACS  
 PROJECT NUMBER: 125204Z  
 DATE: 7/18/97

\*\*\*\*\* OHMICRON \*\*\*\*\*

OCOL : PCB

ID : M.PAUL

# : 1E1704

DATE: 12/97

Reduct:Lin.Regression  
 Mation: Ln/LgtB  
 Mode : Absorbance  
 length : 450 nm  
 s : PPB

ITION OF LINE :

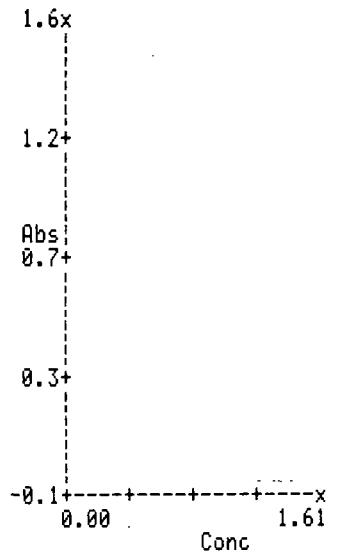
e = -1.106  
 rcept = 1.632  
 (r) = 1.0000

Informed Data :

Conc	Abs
00	1.632
61	-0.148

rator Data:

	Abs	%CV	Predic
	Diff		%Diff
1	1.050		
1	1.049		
1	1.050	0.1	
	1.158	nd	
	1.153	nd	
-	1.156	0.3	nd
	0.878	1.00	
	0.000	0.0	
	0.878	1.00	
	0.000	0.0	
-	0.878	0.0	1.00
	0.000	0.0	
.00	0.486	5.00	
	-0.000	-0.0	
	0.486	5.00	
-	-0.000	-0.0	
ean	0.486	0.0	5.00
	-0.000	-0.0	



Control Data : 96.10 RECOVERED

Ctrl#	Abs	Conc
1	0.644	2.88

ID: CONTROL SAMPLE

Samples Data :

Sample#	Abs	Conc
1	0.577	3.65 36.5ppm
ID: SP01		
2	0.272	11.29Hi > 112.9 ppm
ID: SP02		
3	0.475	5.19Hi > 51.9 ppm
ID: SA01-01		
4	0.796	1.55 15.5ppm
ID: TRENCH #12		

NOTE: THIS RUN DOES NOT INCLUDE THE PROPER Q.C. PROCEDURES. RESULTS SHOULD BE VIEWED WITH SOME SCRUTINY. ONLY (1) INSTEAD OF (2) STANDARDS AT EACH LEVEL WERE RUN. ALSO NO PURITY SAMPLES WERE INCLUDED. THE VOLUME OF SOLUTIONS WAS VERY LOW AND DID NOT ALLOW THE proper Q.C. TO BE PREPARED AND ANALYZED IN THIS RUN.

M.Paul  
 7/18/97

**APPENDIX E**

**SOIL SCREENING DATA**

## SCREENING DATA

### Data for Total Material

#### D02 PIT

Load #	Front Axle Wt. (lbs)	Rear Axle Wt. (lbs)	Total Weight (lbs)	Time (min)
1	18,280	8,500	26,780	--
2	17,060	9,380	26,440	0
3	15,980	8,880	24,860	8
4	16,000	9,440	25,440	14
5	15,520	9,540	25,060	22
6	17,320	8,920	26,240	30.5
End of Screening			32.5	

Truck Tare = 22,060 lbs

### Calculated Material Weight

Calculated Wt (lbs)	Total Time (min)
4,720	~18
4,380	
2,800	
3,380	
3,000	
4,180	
22,460	

Screening Rate = 56.15 tons/hr

### Data for Screened Soil

#### D02 PIT

Load #	Front Axle Wt. (lbs)	Rear Axle Wt. (lbs)	Total Weight (lbs)	Soil Wt. (lbs)
S1	17,180	9,020	26,200	4,140
S2	15,740	9,540	25,280	3,220
S3	16,020	9,380	25,400	3,340
S4	14,800	10,180	24,980	2,920
S5	14,480	9,360	23,840	1,780
				15,400

68.6 % Soil  
31.4 % Debris

#### SP02 PIT

Load #	Front Axle Wt. (lbs)	Rear Axle Wt. (lbs)	Total Weight (lbs)	Time (min)
1	19,660	7,460	27,120	2
2	18,900	7,620	26,520	3
3	17,680	7,600	25,280	2
4	18,240	8,160	26,400	2
5	20,680	7,160	27,840	3

Truck Tare = 21,980 lbs

Calculated Wt (lbs)	Total Time (min)
5,140	12
4,540	
3,300	
4,420	
5,860	
23,260	

Screening Rate = 58.15 tons/hr

#### SP02 PIT

Load #	Front Axle Wt. (lbs)	Rear Axle Wt. (lbs)	Total Weight (lbs)	Soil Wt. (lbs)
S1	16,740	8,540	25,280	3,300
S2	16,800	9,100	25,900	3,920
S3	15,200	8,800	24,000	2,020
S4	11,860	8,200	20,060	0
				9,240

39.7 % Soil  
60.3 % Debris

## SCREENING DATA

### Data for Total Material

#### D01 PIT

Load #	Front Axle Wt. (lbs)	Rear Axle Wt. (lbs)	Total Weight (lbs)	Total Time (min)	Time/Load (min)	Calculated Wt (lbs)	Total Time (min)
1	14,400	9,980	24,380	1.13	1.13	2,320	12
2	16,340	9,140	25,480	1.56	0.43	3,420	
3	20,080	7,600	27,680	3.3	1.74	5,620	
4	16,780	8,740	25,520	4.55	1.25	3,460	
5	16,980	9,120	26,100	5.59	1.04	4,040	
6	17,620	8,920	26,540	7.32	1.73	4,480	
7	15,720	9,480	25,200	8.38	1.06	3,140	
8	17,360	8,820	26,180	10.03	1.65	4,120	
9	16,500	9,300	25,800	10.59	0.56	3,740	
10	14,780	9,260	24,040	11.52	0.93	1,980	
				11.52		36,320	

Truck Tare = 22,060 lbs

Screening Rate = 90.80 tons/hr

#### KP01 PIT

Load #	Front Axle Wt. (lbs)	Rear Axle Wt. (lbs)	Total Weight (lbs)	Total Time (min)	Time/Load (min)	Calculated Wt (lbs)	Total Time (min)
1	18,600	8,580	27,180	1.23	1.13	5,120	12
2	16,160	8,600	24,760	3.12	1.89	2,700	
3	17,200	8,480	25,680	5.51	2.39	3,620	
4	19,600	7,760	27,360	8.54	3.03	5,300	
5	16,780	8,760	25,540	11.48	2.94	3,480	
				11.38		20,220	

Truck Tare = 22,060 lbs

Screening Rate = 50.55 tons/hr

### Calculated Material Weight

### Data for Screened Soil

### Calculated Soil Weight

#### D01 PIT

Load #	Front Axle Wt. (lbs)	Rear Axle Wt. (lbs)	Total Weight (lbs)	Soil Wt. (lbs)
S1	16,380	9,320	25,700	3,640
S2	17,040	8,400	25,440	3,380
S3	18,060	8,680	26,740	4,680
S4	15,620	9,660	25,280	3,220
S5	14,520	10,340	24,860	2,800
S6	13,500	10,640	24,140	2,080
S7	12,620	10,880	23,500	1,440
S8	13,200	10,820	24,020	1,960
S9	12,160	11,180	23,340	1,280
			24,480	

Truck Tare = 22,060 lbs

67.4 % Soil  
32.6 % Debris

#### KP01 PIT

Load #	Front Axle Wt. (lbs)	Rear Axle Wt. (lbs)	Total Weight (lbs)	Soil Wt. (lbs)
S1	16,980	9,040	26,020	3,960
S2	16,080	9,480	25,560	3,500
S3	16,500	9,200	25,700	3,640
S4	14,480	9,960	24,440	2,380
S5	13,980	10,180	24,160	2,100
S6	12,740	10,760	23,500	1,440
			15,580	

Truck Tare = 22,060 lbs

77.1 % Soil  
22.9 % Debris

## SCREENING DATA

### Data for Total Material

#### SP01 PIT (Errors in Weight Measurements)

Load #	Front Axle Wt. (lbs)	Rear Axle Wt. (lbs)	Total Weight (lbs)	Time (min)
1	14,520	8,660	23,180	3
2	12,980	8,660	21,640	2
3	13,260	7,700	20,960	2
4	15,620	6,640	22,260	3
5	15,780	7,980	23,760	3
6	18,260	8,280	26,540	3

Truck Tare = 21,980 lbs

### Calculated Material Weight

Calculated Wt (lbs)	Total Time (min)
1,200	12
--	--
280	
1,780	
4,560	
7,820	

Screening Rate = 19.55 tons/hr

### Data for Screened Soil

#### SP01 PIT

Load #	Front Axle Wt. (lbs)	Rear Axle Wt. (lbs)	Total Weight (lbs)	Soil Wt. (lbs)
S1	15,400	8,800	24,200	2,220
S2	16,140	9,260	25,400	3,420
S3	15,800	9,640	25,440	3,460
S4	13,360	9,380	22,740	760
S5	13,660	10,400	24,060	2,080

11,940

152.7 % Soil  
-52.7 % Debris

Truck Tare = 21,980 lbs

**APPENDIX F**

**ANALYTICAL DATA PACKAGE**

**IEA LABORATORY**



**IEA**  
An Aquarion Company

IEA, Inc.  
3000 Weston Parkway  
Cary, NC 27513

Phone 919-677-0090  
Fax 919-677-0427

August 18, 1997

**Paul Sadler  
Focus Environmental, Inc.  
9050 Executive Park Drive  
Suite A-202  
Knoxville, TN 37923**

**IEA Project No.: 2436001/9707403  
IEA Reference No.: W9707359  
Client Project I.D.: 119603 ACS Site**

Dear Mr. Sadler:

Transmitted herewith are the results of analyses on 18 samples submitted to our laboratory.

The samples were received intact.

Analyses were performed according to approved methodologies and meet the requirements of the IEA Quality Assurance Program except where noted. Please see the enclosed reports for your results and a copy of the Chain of Custody documentation.

Thank you for selecting IEA for your sample analysis. Please do not hesitate to call me at 1-919-677-0090 or 1-800-444-9919 should you have any questions regarding this report. We look forward to serving you in the future.

Very truly yours,

IEA, Inc.

  
**Cynthia Edwards  
Project Manager**

Monroe,  
Connecticut  
203-261-4458

Schaumburg,  
Illinois  
847-705-0740

N. Billerica,  
Massachusetts  
508-667-1400

Whippany,  
New Jersey  
201-428-8181



printed on recycled paper

## IEA/AEN-NORTH CAROLINA CERTIFICATIONS

Certifying State	Program Type	Lab ID #
Alabama	DW	40210
Arizona	DW, WW (Radiolog. Only)	AZ0572
California	DW, WW, HW Radiolog.	1768
Connecticut	DW, WW, Radiolog.	PH-0135
Iowa	WW	352
Kansas	DW, HW, WW, Radiolog.	E-10158
Kentucky	DW	90049
Maryland	DW, Radiolog.	259
Massachusetts	DW, WW	M-NC039
New Jersey	DW, WW Radiolog.	67719 67681
New York	Radiolog.	11422
North Carolina	DW WW Radiolog.	DW 37720 WW 84 Rad 37720
South Carolina	DW, WW, HW	99021
Tennessee	DW UST App List	02914
Utah	Radiolog. RCRA	E-206 E-226
Virginia	DW, Radiolog.	00179
West Virginia	DW	9908C
Wisconsin	WW	998051010

**DW=Drinking Water    WW=Wastewater    HW=Hazardous Waste    Radiolog.=Radiological**



## ATTENTION

Dear Valued Client:

Included in your data package are improved GC/MS volatile and semivolatile organic result forms for SW-846 methodologies. IEA is in the process of implementing a new Laboratory Information Management System (LIMS). This new system will allow IEA to present data to you in a more efficient and usable fashion. As we continue to implement the new system, additional test methods will be converted to the new report format. For your review, we have highlighted several of the key changes to these forms, below:

### FORMAT CHANGES

- \* U (for undetected) replaces BQL
- \* Chemical Abstract Society (CAS) numbers have been added for easy compound identification
- \* The result column contains the fully adjusted result or fully adjusted quantitation limit
- \* Header information is easier to read

We are confident that you will find these new result forms easier to use. The form changes are only a few of the improvements resulting from our new LIMS from which you, our customer, will benefit. If you should have any questions, please contact your Account Executive or Project Manager. Again, we thank you for the opportunity to support your environmental needs.

Sincerely,

A handwritten signature in black ink that reads "Jack Dullaghan".

Jack P. Dullaghan  
Director, North Carolina Operations

IEA

**SDG NARRATIVE VOLATILE FRACTION**

PROJECT: 2436-001

BATCH: 07403

METHOD: SW-846 8240 TCLP

Samples: Four (4) Leachate Samples

The samples were received at Industrial and Environmental Analysts, Inc. (IEA) on July 21, 1997. Each sample was assigned a 9-character "IEA" lab identification number (lab ID) and a truncated client ID (for forms generation). This package makes reference to these ID's as listed on the IEA Assigned Number Index. All analyses were performed according to approved methodologies and meet the requirements of the IEA Quality Assurance Program. Please see the enclosed data package for your results and Chain of Custody (COC) documentation.

The following nonconformances associated with the analysis of the samples in this case are as follows:

The leaching date of the leachate samples for this project exceeds the protocol holding time specified by the method. The client had been made aware that the matrix of the samples precluded the leaching procedure to be performed within holding time.

I certify that this data package is in compliance with the procedures and methods defined for this project, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data (if applicable) as submitted has been authorized by the laboratory manager or his designee, as verified by the following signature.



08/13/97

Elsie S. Byrd  
GC/MS Data Reviewer  
IEA, Inc.

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
 SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 METHOD 8260

IEA Project Number: 2436-001                      Date Received: 07/21/97  
 IEA Sample Number: 970740301                      Date Sampled: 07/17/97  
 Client Name: Focus Environmental, Inc.              Date Analyzed: 07/31/97  
 Client Project: 119603 ACS Site                      Lab File ID: 0731106.D  
 Sample Identification: D02-S-IEA                      Analyst: MOORE  
 Matrix: (soil/water) SOIL                              Dilution Factor: 1.0  
 % Moisture: not dec. 13

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	14000	U
71-43-2	Benzene	620	1400	U
75-27-4	Bromodichloromethane	620	1400	U
75-25-2	Bromoform	620	1400	U
74-83-9	Bromomethane	1200	2800	U
78-93-3	2-Butanone	1200	2800	U
75-15-0	Carbon Disulfide	620	1400	U
56-23-5	Carbon Tetrachloride	620	1400	U
108-90-7	Chlorobenzene	620	1400	U
75-00-3	Chloroethane	1200	2800	U
67-66-3	Chloroform	620	1400	U
74-87-3	Chloromethane	1200	2800	U
124-48-1	Dibromochloromethane	620	1400	U
75-34-3	1,1-Dichloroethane	620	1400	U
107-06-2	1,2-Dichloroethane	620	1400	U
75-35-4	1,1-Dichloroethene	620	1400	U
156-59-2	Cis-1,2-Dichloroethene	620	1400	U
156-60-5	Trans-1,2-Dichloroethene	620	1400	U
78-87-5	1,2-Dichloropropane	620	1400	U
10061-01-5	Cis-1,3-Dichloropropene	620	1400	U
10061-02-6	Trans-1,3-Dichloropropene	620	1400	U
100-41-4	Ethylbenzene	620	19000	
591-78-6	2-Hexanone	1200	2800	U
75-09-2	Methylene Chloride	1200	2800	U
108-10-1	4-Methyl-2-Pentanone	1200	2800	U
100-42-5	Styrene	620	1400	U
79-34-5	1,1,2,2-Tetrachloroethane	620	1400	U
127-18-4	Tetrachloroethene	620	1700	
108-88-3	Toluene	620	21000	
71-55-6	1,1,1-Trichloroethane	620	1400	U
79-00-5	1,1,2-Trichloroethane	620	1400	U
79-01-6	Trichloroethene	620	1400	U
75-01-4	Vinyl Chloride	1200	2800	U
1330-20-7	Xylene (Total)	620	100000	

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IEA Project Number: 2436-001                          Date Received: 07/21/97  
 IEA Sample Number: 970740302                          Date Sampled: 07/17/97  
 Client Name: Focus Environmental, Inc.                  Date Analyzed: 07/31/97  
 Client Project: 119603 ACS Site                          Lab File ID: 0730J09.D  
 Sample Identification: SA04-S-IEA                          Analyst: CREWES  
 Matrix: (soil/water) SOIL                                  Dilution Factor: 50.0  
 % Moisture: not dec. 19

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	1200000	
71-43-2	Benzene	620	45000	
75-27-4	Bromodichloromethane	620	38000	U
75-25-2	Bromoform	620	38000	U
74-83-9	Bromomethane	1200	74000	U
78-93-3	2-Butanone	1200	170000	
75-15-0	Carbon Disulfide	620	38000	U
56-23-5	Carbon Tetrachloride	620	38000	U
108-90-7	Chlorobenzene	620	38000	U
75-00-3	Chloroethane	1200	74000	U
67-66-3	Chloroform	620	38000	U
74-87-3	Chloromethane	1200	74000	U
124-48-1	Dibromochloromethane	620	38000	U
75-34-3	1,1-Dichloroethane	620	38000	U
107-06-2	1,2-Dichloroethane	620	38000	U
75-35-4	1,1-Dichloroethene	620	38000	U
156-59-2	Cis-1,2-Dichloroethene	620	38000	U
156-60-5	Trans-1,2-Dichloroethene	620	38000	U
78-87-5	1,2-Dichloropropane	620	38000	U
10061-01-5	Cis-1,3-Dichloropropene	620	38000	U
10061-02-6	Trans-1,3-Dichloropropene	620	38000	U
100-41-4	Ethylbenzene	620	300000	
591-78-6	2-Hexanone	1200	91000	
75-09-2	Methylene Chloride	1200	74000	U
108-10-1	4-Methyl-2-Pentanone	1200	110000	
100-42-5	Styrene	620	38000	U
79-34-5	1,1,2,2-Tetrachloroethane	620	38000	U
127-18-4	Tetrachloroethene	620	880000	
108-88-3	Toluene	620	920000	
71-55-6	1,1,1-Trichloroethane	620	38000	U
79-00-5	1,1,2-Trichloroethane	620	38000	U
79-01-6	Trichloroethene	620	350000	
75-01-4	Vinyl Chloride	1200	74000	U
1330-20-7	Xylene (Total)	620	1600000	

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 METHOD 8260

IEA Project Number: 2436-001                      Date Received: 07/21/97  
 IEA Sample Number: 970740303                      Date Sampled: 07/17/97  
 Client Name: Focus Environmental, Inc.              Date Analyzed: 07/31/97  
 Client Project: 119603 ACS Site                      Lab File ID: 0730J08.D  
 Sample Identification: D01-S-IEA                      Analyst: CREWES  
 Matrix: (soil/water) SOIL                              Dilution Factor: 1.0  
 % Moisture: not dec. 14

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	36000	U
71-43-2	Benzene	620	3600	U
75-27-4	Bromodichloromethane	620	3600	U
75-25-2	Bromoform	620	3600	U
74-83-9	Bromomethane	1200	7000	U
78-93-3	2-Butanone	1200	7000	U
75-15-0	Carbon Disulfide	620	3600	U
56-23-5	Carbon Tetrachloride	620	3600	U
108-90-7	Chlorobenzene	620	3600	U
75-00-3	Chloroethane	1200	7000	U
67-66-3	Chloroform	620	3600	U
74-87-3	Chloromethane	1200	7000	U
124-48-1	Dibromochloromethane	620	3600	U
75-34-3	1,1-Dichloroethane	620	3600	U
107-06-2	1,2-Dichloroethane	620	3600	U
75-35-4	1,1-Dichloroethene	620	3600	U
156-59-2	Cis-1,2-Dichloroethene	620	3600	U
156-60-5	Trans-1,2-Dichloroethene	620	3600	U
78-87-5	1,2-Dichloropropane	620	3600	U
10061-01-5	Cis-1,3-Dichloropropene	620	3600	U
10061-02-6	Trans-1,3-Dichloropropene	620	3600	U
100-41-4	Ethylbenzene	620	52000	
591-78-6	2-Hexanone	1200	7000	U
75-09-2	Methylene Chloride	1200	7000	U
108-10-1	4-Methyl-2-Pentanone	1200	15000	
100-42-5	Styrene	620	3600	U
79-34-5	1,1,2,2-Tetrachloroethane	620	3600	U
127-18-4	Tetrachloroethene	620	3700	
108-88-3	Toluene	620	67000	
71-55-6	1,1,1-Trichloroethane	620	3600	U
79-00-5	1,1,2-Trichloroethane	620	3600	U
79-01-6	Trichloroethene	620	3600	U
75-01-4	Vinyl Chloride	1200	7000	U
1330-20-7	Xylene (Total)	620	320000	

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METHOD 8260

IEA Project Number: 2436-001                      Date Received: 07/21/97  
 IEA Sample Number: 970740304                      Date Sampled: 07/17/97  
 Client Name: Focus Environmental, Inc.              Date Analyzed: 07/31/97  
 Client Project: 119603 ACS Site                      Lab File ID: 0731105.D  
 Sample Identification: KP01-S-IEA                      Analyst: MOORE  
 Matrix: (soil/water) SOIL                              Dilution Factor: 1.0  
 % Moisture: not dec. 19

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	15000	U
71-43-2	Benzene	620	1500	U
75-27-4	Bromodichloromethane	620	1500	U
75-25-2	Bromoform	620	1500	U
74-83-9	Bromomethane	1200	3000	U
78-93-3	2-Butanone	1200	3000	U
75-15-0	Carbon Disulfide	620	1500	U
56-23-5	Carbon Tetrachloride	620	1500	U
108-90-7	Chlorobenzene	620	1500	U
75-00-3	Chloroethane	1200	3000	U
67-66-3	Chloroform	620	1500	U
74-87-3	Chloromethane	1200	3000	U
124-48-1	Dibromochloromethane	620	1500	U
75-34-3	1,1-Dichloroethane	620	1500	U
107-06-2	1,2-Dichloroethane	620	1500	U
75-35-4	1,1-Dichloroethene	620	1500	U
156-59-2	Cis-1,2-Dichloroethene	620	1500	U
156-60-5	Trans-1,2-Dichloroethene	620	1500	U
78-87-5	1,2-Dichloropropane	620	1500	U
10061-01-5	Cis-1,3-Dichloropropene	620	1500	U
10061-02-6	Trans-1,3-Dichloropropene	620	1500	U
100-41-4	Ethylbenzene	620	1500	U
591-78-6	2-Hexanone	1200	3000	U
75-09-2	Methylene Chloride	1200	3000	U
108-10-1	4-Methyl-2-Pentanone	1200	3000	U
100-42-5	Styrene	620	1500	U
79-34-5	1,1,2,2-Tetrachloroethane	620	1500	U
127-18-4	Tetrachloroethene	620	1500	U
108-88-3	Toluene	620	2700	
71-55-6	1,1,1-Trichloroethane	620	1500	U
79-00-5	1,1,2-Trichloroethane	620	1500	U
79-01-6	Trichloroethene	620	1500	U
75-01-4	Vinyl Chloride	1200	3000	U
1330-20-7	Xylene (Total)	620	62000	

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 METHOD 8260

IEA Project Number: 2436-001                      Date Received: 07/21/97  
 IEA Sample Number: 970740305                      Date Sampled: 07/17/97  
 Client Name: Focus Environmental, Inc.              Date Analyzed: 07/31/97  
 Client Project: 119603 ACS Site                      Lab File ID: 0730J10.D  
 Sample Identification: SA02-S-IEA                      Analyst: CREWES  
 Matrix: (soil/water) SOIL                              Dilution Factor: 50.0  
 % Moisture: not dec. 27

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	420000	U
71-43-2	Benzene	620	42000	U
75-27-4	Bromodichloromethane	620	42000	U
75-25-2	Bromoform	620	42000	U
74-83-9	Bromomethane	1200	82000	U
78-93-3	2-Butanone	1200	520000	
75-15-0	Carbon Disulfide	620	42000	U
56-23-5	Carbon Tetrachloride	620	42000	U
108-90-7	Chlorobenzene	620	42000	U
75-00-3	Chloroethane	1200	82000	U
67-66-3	Chloroform	620	42000	U
74-87-3	Chloromethane	1200	82000	U
124-48-1	Dibromochloromethane	620	42000	U
75-34-3	1,1-Dichloroethane	620	42000	U
107-06-2	1,2-Dichloroethane	620	42000	U
75-35-4	1,1-Dichloroethene	620	42000	U
156-59-2	Cis-1,2-Dichloroethene	620	42000	U
156-60-5	Trans-1,2-Dichloroethene	620	42000	U
78-87-5	1,2-Dichloropropane	620	42000	U
10061-01-5	Cis-1,3-Dichloropropene	620	42000	U
10061-02-6	Trans-1,3-Dichloropropene	620	42000	U
100-41-4	Ethylbenzene	620	680000	
591-78-6	2-Hexanone	1200	82000	U
75-09-2	Methylene Chloride	1200	82000	U
108-10-1	4-Methyl-2-Pentanone	1200	360000	
100-42-5	Styrene	620	42000	U
79-34-5	1,1,2,2-Tetrachloroethane	620	42000	U
127-18-4	Tetrachloroethene	620	170000	
108-88-3	Toluene	620	1300000	
71-55-6	1,1,1-Trichloroethane	620	42000	U
79-00-5	1,1,2-Trichloroethane	620	42000	U
79-01-6	Trichloroethene	620	160000	
75-01-4	Vinyl Chloride	1200	82000	U
1330-20-7	Xylene (Total)	620	3600000	

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 METHOD 8260

IEA Project Number: 2436-001                      Date Received: 07/21/97  
 IEA Sample Number: 970740306                      Date Sampled: 07/18/97  
 Client Name: Focus Environmental, Inc.              Date Analyzed: 07/30/97  
 Client Project: 119603 ACS Site                      Lab File ID: 0729V14.D  
 Sample Identification: T12-S-IEA                      Analyst: CREWES  
 Matrix: (soil/water) SOIL                              Dilution Factor: 5.0  
 % Moisture: not dec. 8

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	50	270	U
71-43-2	Benzene	5	27	U
75-27-4	Bromodichloromethane	5	27	U
75-25-2	Bromoform	5	27	U
74-83-9	Bromomethane	10	54	U
78-93-3	2-Butanone	10	54	U
75-15-0	Carbon Disulfide	5	27	U
56-23-5	Carbon Tetrachloride	5	27	U
108-90-7	Chlorobenzene	5	27	U
75-00-3	Chloroethane	10	54	U
67-66-3	Chloroform	5	27	U
74-87-3	Chloromethane	10	54	U
124-48-1	Dibromochloromethane	5	27	U
75-34-3	1,1-Dichloroethane	5	27	U
107-06-2	1,2-Dichloroethane	5	27	U
75-35-4	1,1-Dichloroethene	5	27	U
156-59-2	Cis-1,2-Dichloroethene	5	140	
156-60-5	Trans-1,2-Dichloroethene	5	27	U
78-87-5	1,2-Dichloropropane	5	27	U
10061-01-5	Cis-1,3-Dichloropropene	5	27	U
10061-02-6	Trans-1,3-Dichloropropene	5	27	U
100-41-4	Ethylbenzene	5	27	U
591-78-6	2-Hexanone	10	54	U
75-09-2	Methylene Chloride	10	54	U
108-10-1	4-Methyl-2-Pentanone	10	54	U
100-42-5	Styrene	5	27	U
79-34-5	1,1,2,2-Tetrachloroethane	5	27	U
127-18-4	Tetrachloroethene	5	1000	
108-88-3	Toluene	5	82	
71-55-6	1,1,1-Trichloroethane	5	31	
79-00-5	1,1,2-Trichloroethane	5	27	U
79-01-6	Trichloroethene	5	1100	
75-01-4	Vinyl Chloride	10	54	U
1330-20-7	Xylene (Total)	5	800	

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 METHOD 8260

IEA Project Number: 2436-001                      Date Received: 07/21/97  
 IEA Sample Number: 970740307                      Date Sampled: 07/18/97  
 Client Name: Focus Environmental, Inc.              Date Analyzed: 08/01/97  
 Client Project: 119603 ACS Site                      Lab File ID: 0801106.D  
 Sample Identification: SA01-S-IEA-02                Analyst: MOORE  
 Matrix: (soil/water) SOIL                          Dilution Factor: 1.0  
 % Moisture: not dec. 6

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	33000	U
71-43-2	Benzene	620	3300	U
75-27-4	Bromodichloromethane	620	3300	U
75-25-2	Bromoform	620	3300	U
74-83-9	Bromomethane	1200	6400	U
78-93-3	2-Butanone	1200	28000	
75-15-0	Carbon Disulfide	620	3300	U
56-23-5	Carbon Tetrachloride	620	3300	U
108-90-7	Chlorobenzene	620	3300	U
75-00-3	Chloroethane	1200	6400	U
67-66-3	Chloroform	620	3300	U
74-87-3	Chloromethane	1200	6400	U
124-48-1	Dibromochloromethane	620	3300	U
75-34-3	1,1-Dichloroethane	620	3300	U
107-06-2	1,2-Dichloroethane	620	3300	U
75-35-4	1,1-Dichloroethene	620	3300	U
156-59-2	Cis-1,2-Dichloroethene	620	3300	U
156-60-5	Trans-1,2-Dichloroethene	620	3300	U
78-87-5	1,2-Dichloropropane	620	3300	U
10061-01-5	Cis-1,3-Dichloropropene	620	3300	U
10061-02-6	Trans-1,3-Dichloropropene	620	3300	U
100-41-4	Ethylbenzene	620	3300	U
591-78-6	2-Hexanone	1200	6400	U
75-09-2	Methylene Chloride	1200	6400	U
108-10-1	4-Methyl-2-Pentanone	1200	6400	U
100-42-5	Styrene	620	3300	U
79-34-5	1,1,2,2-Tetrachloroethane	620	3300	U
127-18-4	Tetrachloroethene	620	3300	U
108-88-3	Toluene	620	130000	
71-55-6	1,1,1-Trichloroethane	620	3300	U
79-00-5	1,1,2-Trichloroethane	620	3300	U
79-01-6	Trichloroethene	620	3300	U
75-01-4	Vinyl Chloride	1200	6400	U
1330-20-7	Xylene (Total)	620	10000	

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IEA Project Number: 2436-001                      Date Received: 07/21/97  
 IEA Sample Number: 970740308                      Date Sampled: 07/18/97  
 Client Name: Focus Environmental, Inc.              Date Analyzed: 08/01/97  
 Client Project: 119603 ACS Site                      Lab File ID: 0801107.D  
 Sample Identification: SA01-S-IEA-01                Analyst: MOORE  
 Matrix: (soil/water) SOIL                          Dilution Factor: 50.0  
 % Moisture: not dec. 11

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	350000	U
71-43-2	Benzene	620	35000	U
75-27-4	Bromodichloromethane	620	35000	U
75-25-2	Bromoform	620	35000	U
74-83-9	Bromomethane	1200	67000	U
78-93-3	2-Butanone	1200	67000	U
75-15-0	Carbon Disulfide	620	35000	U
56-23-5	Carbon Tetrachloride	620	35000	U
108-90-7	Chlorobenzene	620	35000	U
75-00-3	Chloroethane	1200	67000	U
67-66-3	Chloroform	620	35000	U
74-87-3	Chloromethane	1200	67000	U
124-48-1	Dibromochloromethane	620	35000	U
75-34-3	1,1-Dichloroethane	620	35000	U
107-06-2	1,2-Dichloroethane	620	35000	U
75-35-4	1,1-Dichloroethene	620	35000	U
156-59-2	Cis-1,2-Dichloroethene	620	35000	U
156-60-5	Trans-1,2-Dichloroethene	620	35000	U
78-87-5	1,2-Dichloropropane	620	35000	U
10061-01-5	Cis-1,3-Dichloropropene	620	35000	U
10061-02-6	Trans-1,3-Dichloropropene	620	35000	U
100-41-4	Ethylbenzene	620	35000	U
591-78-6	2-Hexanone	1200	67000	U
75-09-2	Methylene Chloride	1200	67000	U
108-10-1	4-Methyl-2-Pentanone	1200	67000	U
100-42-5	Styrene	620	35000	U
79-34-5	1,1,2,2-Tetrachloroethane	620	35000	U
127-18-4	Tetrachloroethene	620	280000	
108-88-3	Toluene	620	160000	
71-55-6	1,1,1-Trichloroethane	620	35000	U
79-00-5	1,1,2-Trichloroethane	620	35000	U
79-01-6	Trichloroethene	620	35000	U
75-01-4	Vinyl Chloride	1200	67000	U
1330-20-7	Xylene (Total)	620	280000	

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
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 METHOD 8260

IEA Project Number: 2436-001                      Date Received: 07/21/97  
 IEA Sample Number: 970740309                      Date Sampled: 07/18/97  
 Client Name: Focus Environmental, Inc.              Date Analyzed: 08/01/97  
 Client Project: 119603 ACS Site                      Lab File ID: 0801108.D  
 Sample Identification: SP01-S-IEA                      Analyst: MOORE  
 Matrix: (soil/water) SOIL                              Dilution Factor: 100.0  
 % Moisture: not dec. 17

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	750000	U
71-43-2	Benzene	620	75000	U
75-27-4	Bromodichloromethane	620	75000	U
75-25-2	Bromoform	620	75000	U
74-83-9	Bromomethane	1200	140000	U
78-93-3	2-Butanone	1200	140000	U
75-15-0	Carbon Disulfide	620	75000	U
56-23-5	Carbon Tetrachloride	620	75000	U
108-90-7	Chlorobenzene	620	75000	U
75-00-3	Chloroethane	1200	140000	U
67-66-3	Chloroform	620	75000	U
74-87-3	Chloromethane	1200	140000	U
124-48-1	Dibromochloromethane	620	75000	U
75-34-3	1,1-Dichloroethane	620	75000	U
107-06-2	1,2-Dichloroethane	620	75000	U
75-35-4	1,1-Dichloroethene	620	75000	U
156-59-2	Cis-1,2-Dichloroethene	620	75000	U
156-60-5	Trans-1,2-Dichloroethene	620	75000	U
78-87-5	1,2-Dichloropropane	620	75000	U
10061-01-5	Cis-1,3-Dichloropropene	620	75000	U
10061-02-6	Trans-1,3-Dichloropropene	620	75000	U
100-41-4	Ethylbenzene	620	710000	
591-78-6	2-Hexanone	1200	140000	U
75-09-2	Methylene Chloride	1200	140000	U
108-10-1	4-Methyl-2-Pentanone	1200	410000	
100-42-5	Styrene	620	75000	U
79-34-5	1,1,2,2-Tetrachloroethane	620	75000	U
127-18-4	Tetrachloroethene	620	220000	
108-88-3	Toluene	620	960000	
71-55-6	1,1,1-Trichloroethane	620	75000	U
79-00-5	1,1,2-Trichloroethane	620	75000	U
79-01-6	Trichloroethene	620	75000	U
75-01-4	Vinyl Chloride	1200	140000	U
1330-20-7	Xylene (Total)	620	5000000	

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 METHOD 8260

IEA Project Number: 2436-001                      Date Received: 07/21/97  
 IEA Sample Number: 970740310                      Date Sampled: 07/18/97  
 Client Name: Focus Environmental, Inc.              Date Analyzed: 08/01/97  
 Client Project: 119603 ACS Site                      Lab File ID: 0801109.D  
 Sample Identification: SP02-S-IEA                      Analyst: MOORE  
 Matrix: (soil/water) SOIL                              Dilution Factor: 100.0  
 % Moisture: not dec. 19

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	760000	U
71-43-2	Benzene	620	76000	U
75-27-4	Bromodichloromethane	620	76000	U
75-25-2	Bromoform	620	76000	U
74-83-9	Bromomethane	1200	150000	U
78-93-3	2-Butanone	1200	240000	
75-15-0	Carbon Disulfide	620	76000	U
56-23-5	Carbon Tetrachloride	620	76000	U
108-90-7	Chlorobenzene	620	76000	U
75-00-3	Chloroethane	1200	150000	U
67-66-3	Chloroform	620	76000	U
74-87-3	Chloromethane	1200	150000	U
124-48-1	Dibromochloromethane	620	76000	U
75-34-3	1,1-Dichloroethane	620	76000	U
107-06-2	1,2-Dichloroethane	620	76000	U
75-35-4	1,1-Dichloroethene	620	76000	U
156-59-2	Cis-1,2-Dichloroethene	620	76000	U
156-60-5	Trans-1,2-Dichloroethene	620	76000	U
78-87-5	1,2-Dichloropropane	620	76000	U
10061-01-5	Cis-1,3-Dichloropropene	620	76000	U
10061-02-6	Trans-1,3-Dichloropropene	620	76000	U
100-41-4	Ethylbenzene	620	830000	
591-78-6	2-Hexanone	1200	150000	U
75-09-2	Methylene Chloride	1200	150000	U
108-10-1	4-Methyl-2-Pentanone	1200	500000	
100-42-5	Styrene	620	76000	U
79-34-5	1,1,2,2-Tetrachloroethane	620	76000	U
127-18-4	Tetrachloroethene	620	290000	
108-88-3	Toluene	620	1300000	
71-55-6	1,1,1-Trichloroethane	620	76000	U
79-00-5	1,1,2-Trichloroethane	620	76000	U
79-01-6	Trichloroethene	620	76000	U
75-01-4	Vinyl Chloride	1200	150000	U
1330-20-7	Xylene (Total)	620	5500000	

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
 SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 METHOD 8260

IEA Project Number: 2436-001                          Date Received: 07/21/97  
 IEA Sample Number: 970740311                          Date Sampled: 07/17/97  
 Client Name: Focus Environmental, Inc.                  Date Analyzed: 07/31/97  
 Client Project: 119603 ACS Site                          Lab File ID: 0731109.D  
 Sample Identification: SA04-0-IEA-01                          Analyst: MOORE  
 Matrix: (soil/water) SOIL                                  Dilution Factor: 5000.0  
 % Moisture: not dec. 76

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	130000000	U
71-43-2	Benzene	620	89000000	
75-27-4	Bromodichloromethane	620	13000000	U
75-25-2	Bromoform	620	13000000	U
74-83-9	Bromomethane	1200	25000000	U
78-93-3	2-Butanone	1200	64000000	
75-15-0	Carbon Disulfide	620	13000000	U
56-23-5	Carbon Tetrachloride	620	13000000	U
108-90-7	Chlorobenzene	620	13000000	U
75-00-3	Chloroethane	1200	25000000	U
67-66-3	Chloroform	620	31000000	
74-87-3	Chloromethane	1200	25000000	U
124-48-1	Dibromochloromethane	620	13000000	U
75-34-3	1,1-Dichloroethane	620	13000000	U
107-06-2	1,2-Dichloroethane	620	13000000	U
75-35-4	1,1-Dichloroethene	620	13000000	U
156-59-2	Cis-1,2-Dichloroethene	620	13000000	U
156-60-5	Trans-1,2-Dichloroethene	620	13000000	U
78-87-5	1,2-Dichloropropane	620	13000000	U
10061-01-5	Cis-1,3-Dichloropropene	620	13000000	U
10061-02-6	Trans-1,3-Dichloropropene	620	13000000	U
100-41-4	Ethylbenzene	620	70000000	
591-78-6	2-Hexanone	1200	25000000	U
75-09-2	Methylene Chloride	1200	25000000	U
108-10-1	4-Methyl-2-Pentanone	1200	25000000	U
100-42-5	Styrene	620	13000000	U
79-34-5	1,1,2,2-Tetrachloroethane	620	13000000	U
127-18-4	Tetrachloroethene	620	47000000	
108-88-3	Toluene	620	260000000	
71-55-6	1,1,1-Trichloroethane	620	33000000	
79-00-5	1,1,2-Trichloroethane	620	13000000	U
79-01-6	Trichloroethene	620	13000000	U
75-01-4	Vinyl Chloride	1200	25000000	U
1330-20-7	Xylene (Total)	620	280000000	

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
 SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 METHOD 8260

IEA Project Number: 2436-001                      Date Received: 07/21/97  
 IEA Sample Number: 970740312                      Date Sampled: 07/17/97  
 Client Name: Focus Environmental, Inc.              Date Analyzed: 07/31/97  
 Client Project: 119603 ACS Site                      Lab File ID: 0731110.D  
 Sample Identification: SA04-0-IEA-02                Analyst: MOORE  
 Matrix: (soil/water) SOIL                          Dilution Factor: 10000.0  
 % Moisture: not dec. 0

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	250000000	
71-43-2	Benzene	620	6200000	U
75-27-4	Bromodichloromethane	620	6200000	U
75-25-2	Bromoform	620	6200000	U
74-83-9	Bromomethane	1200	12000000	U
78-93-3	2-Butanone	1200	19000000	
75-15-0	Carbon Disulfide	620	6200000	U
56-23-5	Carbon Tetrachloride	620	6200000	U
108-90-7	Chlorobenzene	620	6200000	U
75-00-3	Chloroethane	1200	12000000	U
67-66-3	Chloroform	620	6200000	U
74-87-3	Chloromethane	1200	12000000	U
124-48-1	Dibromochloromethane	620	6200000	U
75-34-3	1,1-Dichloroethane	620	6200000	U
107-06-2	1,2-Dichloroethane	620	6200000	U
75-35-4	1,1-Dichloroethene	620	6200000	U
156-59-2	Cis-1,2-Dichloroethene	620	6200000	U
156-60-5	Trans-1,2-Dichloroethene	620	6200000	U
78-87-5	1,2-Dichloropropane	620	6200000	U
10061-01-5	Cis-1,3-Dichloropropene	620	6200000	U
10061-02-6	Trans-1,3-Dichloropropene	620	6200000	U
100-41-4	Ethylbenzene	620	6200000	U
591-78-6	2-Hexanone	1200	12000000	U
75-09-2	Methylene Chloride	1200	12000000	U
108-10-1	4-Methyl-2-Pentanone	1200	12000000	U
100-42-5	Styrene	620	6200000	U
79-34-5	1,1,2,2-Tetrachloroethane	620	6200000	U
127-18-4	Tetrachloroethene	620	6200000	U
108-88-3	Toluene	620	6200000	U
71-55-6	1,1,1-Trichloroethane	620	6200000	U
79-00-5	1,1,2-Trichloroethane	620	6200000	U
79-01-6	Trichloroethene	620	6200000	U
75-01-4	Vinyl Chloride	1200	12000000	U
1330-20-7	Xylene (Total)	620	6200000	U

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
 SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 METHOD 8260

IEA Project Number: 2436-001                          Date Received: 07/21/97  
 IEA Sample Number: 970740313                          Date Sampled: 07/17/97  
 Client Name: Focus Environmental, Inc.                  Date Analyzed: 07/31/97  
 Client Project: 119603 ACS Site                          Lab File ID: 0731114.D  
 Sample Identification: SA02-0-IEA-01                          Analyst: CREWES  
 Matrix: (soil/water) SOIL                                  Dilution Factor: 100.0  
 % Moisture: not dec. 94

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	37000000	
71-43-2	Benzene	620	1000000	U
75-27-4	Bromodichloromethane	620	1000000	U
75-25-2	Bromoform	620	1000000	U
74-83-9	Bromomethane	1200	2000000	U
78-93-3	2-Butanone	1200	14000000	
75-15-0	Carbon Disulfide	620	1000000	U
56-23-5	Carbon Tetrachloride	620	1000000	U
108-90-7	Chlorobenzene	620	1000000	U
75-00-3	Chloroethane	1200	2000000	U
67-66-3	Chloroform	620	1000000	U
74-87-3	Chloromethane	1200	2000000	U
124-48-1	Dibromochloromethane	620	1000000	U
75-34-3	1,1-Dichloroethane	620	1000000	U
107-06-2	1,2-Dichloroethane	620	1000000	U
75-35-4	1,1-Dichloroethene	620	1000000	U
156-59-2	Cis-1,2-Dichloroethene	620	1000000	U
156-60-5	Trans-1,2-Dichloroethene	620	1000000	U
78-87-5	1,2-Dichloropropane	620	1000000	U
10061-01-5	Cis-1,3-Dichloropropene	620	1000000	U
10061-02-6	Trans-1,3-Dichloropropene	620	1000000	U
100-41-4	Ethylbenzene	620	1800000	
591-78-6	2-Hexanone	1200	2000000	U
75-09-2	Methylene Chloride	1200	2000000	U
108-10-1	4-Methyl-2-Pentanone	1200	2700000	
100-42-5	Styrene	620	1000000	U
79-34-5	1,1,2,2-Tetrachloroethane	620	1000000	U
127-18-4	Tetrachloroethene	620	1000000	U
108-88-3	Toluene	620	4900000	
71-55-6	1,1,1-Trichloroethane	620	1000000	U
79-00-5	1,1,2-Trichloroethane	620	1000000	U
79-01-6	Trichloroethene	620	1000000	U
75-01-4	Vinyl Chloride	1200	2000000	U
1330-20-7	Xylene (Total)	620	10000000	

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
 SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 METHOD 8260

IEA Project Number: 2436-001                      Date Received: 07/21/97  
 IEA Sample Number: 970740314                      Date Sampled: 07/17/97  
 Client Name: Focus Environmental, Inc.              Date Analyzed: 07/31/97  
 Client Project: 119603 ACS Site                      Lab File ID: 0731J03.D  
 Sample Identification: SA02-0-IEA-02                Analyst: CREWES  
 Matrix: (soil/water) SOIL                          Dilution Factor: 1000.0  
 % Moisture: not dec. 48

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	12000000	U
71-43-2	Benzene	620	1200000	U
75-27-4	Bromodichloromethane	620	1200000	U
75-25-2	Bromoform	620	1200000	U
74-83-9	Bromomethane	1200	2300000	U
78-93-3	2-Butanone	1200	13000000	
75-15-0	Carbon Disulfide	620	1200000	U
56-23-5	Carbon Tetrachloride	620	1200000	U
108-90-7	Chlorobenzene	620	1200000	U
75-00-3	Chloroethane	1200	2300000	U
67-66-3	Chloroform	620	1200000	U
74-87-3	Chloromethane	1200	2300000	U
124-48-1	Dibromochloromethane	620	1200000	U
75-34-3	1,1-Dichloroethane	620	1200000	U
107-06-2	1,2-Dichloroethane	620	1200000	U
75-35-4	1,1-Dichloroethene	620	1200000	U
156-59-2	Cis-1,2-Dichloroethene	620	1200000	U
156-60-5	Trans-1,2-Dichloroethene	620	1200000	U
78-87-5	1,2-Dichloropropane	620	1200000	U
10061-01-5	Cis-1,3-Dichloropropene	620	1200000	U
10061-02-6	Trans-1,3-Dichloropropene	620	1200000	U
100-41-4	Ethylbenzene	620	7800000	
591-78-6	2-Hexanone	1200	2300000	U
75-09-2	Methylene Chloride	1200	2300000	U
108-10-1	4-Methyl-2-Pentanone	1200	6500000	
100-42-5	Styrene	620	1200000	U
79-34-5	1,1,2,2-Tetrachloroethane	620	1200000	U
127-18-4	Tetrachloroethene	620	2100000	
108-88-3	Toluene	620	40000000	
71-55-6	1,1,1-Trichloroethane	620	1200000	U
79-00-5	1,1,2-Trichloroethane	620	1200000	U
79-01-6	Trichloroethene	620	1200000	U
75-01-4	Vinyl Chloride	1200	2300000	U
1330-20-7	Xylene (Total)	620	45000000	

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
 SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 METHOD TCLP 8240

IEA Project Number: 2436-001                      Date Received: 07/21/97  
 IEA Sample Number: 970740315                      Date Sampled: 07/17/97  
 Client Name: Focus Environmental, Inc.              Date Analyzed: 08/12/97  
 Client Project: 119603 ACS Site                      Lab File ID: 0812I03.D  
 Sample Identification: SA04-0-IEA-01                Analyst: DIXON  
 Matrix: (soil/water) LEACHATE                      Dilution Factor: 5000.0  
 % Moisture: not dec.                              Date Leached: 08/05/97

CAS NO.	COMPOUND	FED REG	QUANT	RESULT:	Q
		LIMIT:	LIMIT: mg/l		
75-01-4	Vinyl Chloride	.2	0.02	100	U
75-35-4	1,1-Dichloroethene	.7	0.01	50	U
67-66-3	Chloroform	6	0.01	100	
107-06-2	1,2-Dichloroethane	.5	0.01	50	U
78-93-3	2-Butanone	200	0.02	1100	B
56-23-5	Carbon Tetrachloride	.5	0.01	50	U
79-01-6	Trichloroethene	.5	0.01	50	U
71-43-2	Benzene	.5	0.01	250	
127-18-4	Tetrachloroethene	.7	0.01	50	U
108-90-7	Chlorobenzene	100	0.01	50	U

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
 SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 METHOD TCLP 8240

IEA Project Number: 2436-001                      Date Received: 07/21/97  
 IEA Sample Number: 970740316                      Date Sampled: 07/17/97  
 Client Name: Focus Environmental, Inc.              Date Analyzed: 08/12/97  
 Client Project: 119603 ACS Site                      Lab File ID: 0812915.D  
 Sample Identification: SA04-0-IEA-02                Analyst: COLLINS  
 Matrix: (soil/water) LEACHATE                      Dilution Factor: 50000.0  
 % Moisture: not dec.                              Date Leached: 08/05/97

CAS NO.	COMPOUND	FED REG	QUANT	RESULT: mg/l	Q
		LIMIT:	mg/l		
75-01-4	Vinyl Chloride	.2	0.02	1000	U
75-35-4	1,1-Dichloroethene	.7	0.01	500	U
67-66-3	Chloroform	6	0.01	500	U
107-06-2	1,2-Dichloroethane	.5	0.01	500	U
78-93-3	2-Butanone	200	0.02	2200	B
56-23-5	Carbon Tetrachloride	.5	0.01	500	U
79-01-6	Trichloroethene	.5	0.01	500	U
71-43-2	Benzene	.5	0.01	500	U
127-18-4	Tetrachloroethene	.7	0.01	500	U
108-90-7	Chlorobenzene	100	0.01	500	U

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
 SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 METHOD TCLP 8240

IEA Project Number: 2436-001                      Date Received: 07/21/97  
 IEA Sample Number: 970740317                      Date Sampled: 07/17/97  
 Client Name: Focus Environmental, Inc.              Date Analyzed: 08/12/97  
 Client Project: 119603 ACS Site                      Lab File ID: 0812914.D  
 Sample Identification: SA02-0-IEA-01                Analyst: COLLINS  
 Matrix: (soil/water) LEACHATE                      Dilution Factor: 500.0  
 % Moisture: not dec.                              Date Leached: 08/05/97

CAS NO.	COMPOUND	FED REG	QUANT	RESULT: mg/l	Q
		LIMIT:	LIMIT: mg/l		
75-01-4	Vinyl Chloride	.2	0.02	10	U
75-35-4	1,1-Dichloroethene	.7	0.01	5.0	U
67-66-3	Chloroform	6	0.01	5.0	U
107-06-2	1,2-Dichloroethane	.5	0.01	5.0	U
78-93-3	2-Butanone	200	0.02	95	B
56-23-5	Carbon Tetrachloride	.5	0.01	5.0	U
79-01-6	Trichloroethene	.5	0.01	5.0	U
71-43-2	Benzene	.5	0.01	5.0	U
127-18-4	Tetrachloroethene	.7	0.01	5.0	U
108-90-7	Chlorobenzene	100	0.01	5.0	U

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
 SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 METHOD TCLP 8240

IEA Project Number: 2436-001                      Date Received: 07/21/97  
 IEA Sample Number: 970740318                      Date Sampled: 07/17/97  
 Client Name: Focus Environmental, Inc.              Date Analyzed: 08/12/97  
 Client Project: 119603 ACS Site                      Lab File ID: 0812913.D  
 Sample Identification: SA02-0-IEA-02                Analyst: COLLINS  
 Matrix: (soil/water) LEACHATE                      Dilution Factor: 2500.0  
 % Moisture: not dec.                              Date Leached: 08/05/97

CAS NO.	COMPOUND	FED REG LIMIT: mg/l	QUANT LIMIT: mg/l	RESULT: mg/l	Q
75-01-4	Vinyl Chloride	.2	0.02	50	U
75-35-4	1,1-Dichloroethene	.7	0.01	25	U
67-66-3	Chloroform	6	0.01	25	U
107-06-2	1,2-Dichloroethane	.5	0.01	25	U
78-93-3	2-Butanone	200	0.02	560	B
56-23-5	Carbon Tetrachloride	.5	0.01	25	U
79-01-6	Trichloroethene	.5	0.01	25	U
71-43-2	Benzene	.5	0.01	25	U
127-18-4	Tetrachloroethene	.7	0.01	25	U
108-90-7	Chlorobenzene	100	0.01	25	U

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
 SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 METHOD 8240

IEA Project Number: 2436-001                      Date Received:

IEA Sample Number: VBLK9V                      Date Sampled:

Client Name: Focus Environmental, Inc.              Date Analyzed: 08/11/97

Client Project: 119603 ACS Site                      Lab File ID: 0811I02.D

Sample Identification: VBLK9V                      Analyst: DIXON

Matrix: (soil/water) WATER                      Dilution Factor: 1.0

% Moisture: not dec.

CAS NO.	COMPOUND	QUANT LIMIT:		RESULT: ug/l	Q
		ug/l			
75-01-4	Vinyl Chloride	10		10	U
75-35-4	1,1-Dichloroethene	5		5	U
67-66-3	Chloroform	5		5	U
107-06-2	1,2-Dichloroethane	5		5	U
78-93-3	2-Butanone	10		10	U
56-23-5	Carbon Tetrachloride	5		5	U
79-01-6	Trichloroethene	5		5	U
71-43-2	Benzene	5		5	U
127-18-4	Tetrachloroethene	5		5	U
108-90-7	Chlorobenzene	5		5	U

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
 SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 METHOD 8240

IEA Project Number: 2436-001                      Date Received:

IEA Sample Number: VBLK9W                      Date Sampled:

Client Name: Focus Environmental, Inc.              Date Analyzed: 08/12/97

Client Project: 119603 ACS Site                      Lab File ID: 0812903.D

Sample Identification: VBLK9W                      Analyst: COLLINS

Matrix: (soil/water) WATER                      Dilution Factor: 1.0

% Moisture: not dec.

CAS NO.	COMPOUND	QUANT LIMIT: ug/l	RESULT: ug/l	Q
75-01-4	Vinyl Chloride	10	10	U
75-35-4	1,1-Dichloroethene	5	5	U
67-66-3	Chloroform	5	5	U
107-06-2	1,2-Dichloroethane	5	5	U
78-93-3	2-Butanone	10	10	U
56-23-5	Carbon Tetrachloride	5	5	U
79-01-6	Trichloroethene	5	5	U
71-43-2	Benzene	5	5	U
127-18-4	Tetrachloroethene	5	5	U
108-90-7	Chlorobenzene	5	5	U

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
 SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 METHOD 8240

IEA Project Number: 2436-001                      Date Received:

IEA Sample Number: VBLK9X                      Date Sampled:

Client Name: Focus Environmental, Inc.              Date Analyzed: 08/12/97

Client Project: 119603 ACS Site                      Lab File ID: 0812I02.D

Sample Identification: VBLK9X                      Analyst: DIXON

Matrix: (soil/water) WATER                      Dilution Factor: 1.0

% Moisture: not dec.

CAS NO.	COMPOUND	QUANT LIMIT: ug/l	RESULT: ug/l	Q
75-01-4	Vinyl Chloride	10	10	U
75-35-4	1,1-Dichloroethene	5	5	U
67-66-3	Chloroform	5	5	U
107-06-2	1,2-Dichloroethane	5	5	U
78-93-3	2-Butanone	10	10	U
56-23-5	Carbon Tetrachloride	5	5	U
79-01-6	Trichloroethene	5	5	U
71-43-2	Benzene	5	5	U
127-18-4	Tetrachloroethene	5	5	U
108-90-7	Chlorobenzene	5	5	U

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
 SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 METHOD 8260

IEA Project Number: 2436-001                      Date Received:

IEA Sample Number: VBLKJ3                      Date Sampled:

Client Name: Focus Environmental, Inc.              Date Analyzed: 07/30/97

Client Project: 119603 ACS Site                      Lab File ID: 0730J03.D

Sample Identification: VBLKJ3                      Analyst: CREWES

Matrix: (soil/water) SOIL                      Dilution Factor: 1.0

% Moisture: not dec. 0

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	6200	U
71-43-2	Benzene	620	620	U
75-27-4	Bromodichloromethane	620	620	U
75-25-2	Bromoform	620	620	U
74-83-9	Bromomethane	1200	1200	U
78-93-3	2-Butanone	1200	1200	U
75-15-0	Carbon Disulfide	620	620	U
56-23-5	Carbon Tetrachloride	620	620	U
108-90-7	Chlorobenzene	620	620	U
75-00-3	Chloroethane	1200	1200	U
67-66-3	Chloroform	620	620	U
74-87-3	Chloromethane	1200	1200	U
124-48-1	Dibromochloromethane	620	620	U
75-34-3	1,1-Dichloroethane	620	620	U
107-06-2	1,2-Dichloroethane	620	620	U
75-35-4	1,1-Dichloroethene	620	620	U
156-59-2	Cis-1,2-Dichloroethene	620	620	U
156-60-5	Trans-1,2-Dichloroethene	620	620	U
78-87-5	1,2-Dichloropropane	620	620	U
10061-01-5	Cis-1,3-Dichloropropene	620	620	U
10061-02-6	Trans-1,3-Dichloropropene	620	620	U
100-41-4	Ethylbenzene	620	620	U
591-78-6	2-Hexanone	1200	1200	U
75-09-2	Methylene Chloride	1200	1200	U
108-10-1	4-Methyl-2-Pentanone	1200	1200	U
100-42-5	Styrene	620	620	U
79-34-5	1,1,2,2-Tetrachloroethane	620	620	U
127-18-4	Tetrachloroethene	620	620	U
108-88-3	Toluene	620	620	U
71-55-6	1,1,1-Trichloroethane	620	620	U
79-00-5	1,1,2-Trichloroethane	620	620	U
79-01-6	Trichloroethene	620	620	U
75-01-4	Vinyl Chloride	1200	1200	U
1330-20-7	Xylene (Total)	620	620	U

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
METHOD 8260

IEA Project Number: 2436-001                      Date Received:

IEA Sample Number: VBLKJ4                      Date Sampled:

Client Name: Focus Environmental, Inc.              Date Analyzed: 07/31/97

Client Project: 119603 ACS Site                      Lab File ID: 0731102.D

Sample Identification: VBLKJ4                      Analyst: MOORE

Matrix: (soil/water) SOIL                      Dilution Factor: 1.0

% Moisture: not dec. 0

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	6200	U
71-43-2	Benzene	620	620	U
75-27-4	Bromodichloromethane	620	620	U
75-25-2	Bromoform	620	620	U
74-83-9	Bromomethane	1200	1200	U
78-93-3	2-Butanone	1200	1200	U
75-15-0	Carbon Disulfide	620	620	U
56-23-5	Carbon Tetrachloride	620	620	U
108-90-7	Chlorobenzene	620	620	U
75-00-3	Chloroethane	1200	1200	U
67-66-3	Chloroform	620	620	U
74-87-3	Chloromethane	1200	1200	U
124-48-1	Dibromochloromethane	620	620	U
75-34-3	1,1-Dichloroethane	620	620	U
107-06-2	1,2-Dichloroethane	620	620	U
75-35-4	1,1-Dichloroethene	620	620	U
156-59-2	Cis-1,2-Dichloroethene	620	620	U
156-60-5	Trans-1,2-Dichloroethene	620	620	U
78-87-5	1,2-Dichloropropane	620	620	U
10061-01-5	Cis-1,3-Dichloropropene	620	620	U
10061-02-6	Trans-1,3-Dichloropropene	620	620	U
100-41-4	Ethylbenzene	620	620	U
591-78-6	2-Hexanone	1200	1200	U
75-09-2	Methylene Chloride	1200	1200	U
108-10-1	4-Methyl-2-Pentanone	1200	1200	U
100-42-5	Styrene	620	620	U
79-34-5	1,1,2,2-Tetrachloroethane	620	620	U
127-18-4	Tetrachloroethene	620	620	U
108-88-3	Toluene	620	620	U
71-55-6	1,1,1-Trichloroethane	620	620	U
79-00-5	1,1,2-Trichloroethane	620	620	U
79-01-6	Trichloroethene	620	620	U
75-01-4	Vinyl Chloride	1200	1200	U
1330-20-7	Xylene (Total)	620	620	U

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
METHOD 8260

IEA Project Number: 2436-001                      Date Received:

IEA Sample Number: VBLKJ5                      Date Sampled:

Client Name: Focus Environmental, Inc.              Date Analyzed: 07/31/97

Client Project: 119603 ACS Site                      Lab File ID: 0731J02.D

Sample Identification: VBLKJ5                      Analyst: CREWES

Matrix: (soil/water) SOIL                      Dilution Factor: 1.0

% Moisture: not dec. 0

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	6200	U
71-43-2	Benzene	620	620	U
75-27-4	Bromodichloromethane	620	620	U
75-25-2	Bromoform	620	620	U
74-83-9	Bromomethane	1200	1200	U
78-93-3	2-Butanone	1200	1200	U
75-15-0	Carbon Disulfide	620	620	U
56-23-5	Carbon Tetrachloride	620	620	U
108-90-7	Chlorobenzene	620	620	U
75-00-3	Chloroethane	1200	1200	U
67-66-3	Chloroform	620	620	U
74-87-3	Chloromethane	1200	1200	U
124-48-1	Dibromochloromethane	620	620	U
75-34-3	1,1-Dichloroethane	620	620	U
107-06-2	1,2-Dichloroethane	620	620	U
75-35-4	1,1-Dichloroethene	620	620	U
156-59-2	Cis-1,2-Dichloroethene	620	620	U
156-60-5	Trans-1,2-Dichloroethene	620	620	U
78-87-5	1,2-Dichloropropane	620	620	U
10061-01-5	Cis-1,3-Dichloropropene	620	620	U
10061-02-6	Trans-1,3-Dichloropropene	620	620	U
100-41-4	Ethylbenzene	620	620	U
591-78-6	2-Hexanone	1200	1200	U
75-09-2	Methylene Chloride	1200	1200	U
108-10-1	4-Methyl-2-Pentanone	1200	1200	U
100-42-5	Styrene	620	620	U
79-34-5	1,1,2,2-Tetrachloroethane	620	620	U
127-18-4	Tetrachloroethene	620	620	U
108-88-3	Toluene	620	620	U
71-55-6	1,1,1-Trichloroethane	620	620	U
79-00-5	1,1,2-Trichloroethane	620	620	U
79-01-6	Trichloroethene	620	620	U
75-01-4	Vinyl Chloride	1200	1200	U
1330-20-7	Xylene (Total)	620	620	U

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
 SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 METHOD 8260

IEA Project Number: 2436-001                      Date Received:

IEA Sample Number: VBLKJ6                      Date Sampled:

Client Name: Focus Environmental, Inc.              Date Analyzed: 08/01/97

Client Project: 119603 ACS Site                      Lab File ID: 0801104.D

Sample Identification: VBLKJ6                      Analyst: MOORE

Matrix: (soil/water) SOIL                      Dilution Factor: 1.0

% Moisture: not dec. 0

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	6200	6200	U
71-43-2	Benzene	620	620	U
75-27-4	Bromodichloromethane	620	620	U
75-25-2	Bromoform	620	620	U
74-83-9	Bromomethane	1200	1200	U
78-93-3	2-Butanone	1200	1200	U
75-15-0	Carbon Disulfide	620	620	U
56-23-5	Carbon Tetrachloride	620	620	U
108-90-7	Chlorobenzene	620	620	U
75-00-3	Chloroethane	1200	1200	U
67-66-3	Chloroform	620	620	U
74-87-3	Chloromethane	1200	1200	U
124-48-1	Dibromochloromethane	620	620	U
75-34-3	1,1-Dichloroethane	620	620	U
107-06-2	1,2-Dichloroethane	620	620	U
75-35-4	1,1-Dichloroethene	620	620	U
156-59-2	Cis-1,2-Dichloroethene	620	620	U
156-60-5	Trans-1,2-Dichloroethene	620	620	U
78-87-5	1,2-Dichloropropane	620	620	U
10061-01-5	Cis-1,3-Dichloropropene	620	620	U
10061-02-6	Trans-1,3-Dichloropropene	620	620	U
100-41-4	Ethylbenzene	620	620	U
591-78-6	2-Hexanone	1200	1200	U
75-09-2	Methylene Chloride	1200	1200	U
108-10-1	4-Methyl-2-Pentanone	1200	1200	U
100-42-5	Styrene	620	620	U
79-34-5	1,1,2,2-Tetrachloroethane	620	620	U
127-18-4	Tetrachloroethene	620	620	U
108-88-3	Toluene	620	620	U
71-55-6	1,1,1-Trichloroethane	620	620	U
79-00-5	1,1,2-Trichloroethane	620	620	U
79-01-6	Trichloroethene	620	620	U
75-01-4	Vinyl Chloride	1200	1200	U
1330-20-7	Xylene (Total)	620	620	U

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
METHOD 8260

IEA Project Number: 2436-001                      Date Received:

IEA Sample Number: VBLKK4                      Date Sampled:

Client Name: Focus Environmental, Inc.              Date Analyzed: 07/29/97

Client Project: 119603 ACS Site                      Lab File ID: 0729K03.D

Sample Identification: VBLKK4                      Analyst: COLLINS

Matrix: (soil/water) SOIL                      Dilution Factor: 1.0

% Moisture: not dec. 0

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	50	50	U
71-43-2	Benzene	5	5	U
75-27-4	Bromodichloromethane	5	5	U
75-25-2	Bromoform	5	5	U
74-83-9	Bromomethane	10	10	U
78-93-3	2-Butanone	10	10	U
75-15-0	Carbon Disulfide	5	5	U
56-23-5	Carbon Tetrachloride	5	5	U
108-90-7	Chlorobenzene	5	5	U
75-00-3	Chloroethane	10	10	U
67-66-3	Chloroform	5	5	U
74-87-3	Chloromethane	10	10	U
124-48-1	Dibromochloromethane	5	5	U
75-34-3	1,1-Dichloroethane	5	5	U
107-06-2	1,2-Dichloroethane	5	5	U
75-35-4	1,1-Dichloroethene	5	5	U
156-59-2	Cis-1,2-Dichloroethene	5	5	U
156-60-5	Trans-1,2-Dichloroethene	5	5	U
78-87-5	1,2-Dichloropropane	5	5	U
10061-01-5	Cis-1,3-Dichloropropene	5	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	5	U
100-41-4	Ethylbenzene	5	5	U
591-78-6	2-Hexanone	10	10	U
75-09-2	Methylene Chloride	10	10	U
108-10-1	4-Methyl-2-Pentanone	10	10	U
100-42-5	Styrene	5	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	5	U
127-18-4	Tetrachloroethene	5	5	U
108-88-3	Toluene	5	5	U
71-55-6	1,1,1-Trichloroethane	5	5	U
79-00-5	1,1,2-Trichloroethane	5	5	U
79-01-6	Trichloroethene	5	5	U
75-01-4	Vinyl Chloride	10	10	U
1330-20-7	Xylene (Total)	5	5	U

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.  
 SW-846 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 METHOD 8260

IEA Project Number: 2436-001                      Date Received:

IEA Sample Number: VBLKK5                      Date Sampled:

Client Name: Focus Environmental, Inc.              Date Analyzed: 07/29/97

Client Project: 119603 ACS Site                      Lab File ID: 0729V02.D

Sample Identification: VBLKK5                      Analyst: CREWES

Matrix: (soil/water) SOIL                      Dilution Factor: 1.0

% Moisture: not dec. 0

CAS NO.	COMPOUND	QUANT LIMIT: ug/kg	RESULT: ug/kg	Q
67-64-1	Acetone	50	50	U
71-43-2	Benzene	5	5	U
75-27-4	Bromodichloromethane	5	5	U
75-25-2	Bromoform	5	5	U
74-83-9	Bromomethane	10	10	U
78-93-3	2-Butanone	10	10	U
75-15-0	Carbon Disulfide	5	5	U
56-23-5	Carbon Tetrachloride	5	5	U
108-90-7	Chlorobenzene	5	5	U
75-00-3	Chloroethane	10	10	U
67-66-3	Chloroform	5	5	U
74-87-3	Chloromethane	10	10	U
124-48-1	Dibromochloromethane	5	5	U
75-34-3	1,1-Dichloroethane	5	5	U
107-06-2	1,2-Dichloroethane	5	5	U
75-35-4	1,1-Dichloroethene	5	5	U
156-59-2	Cis-1,2-Dichloroethene	5	5	U
156-60-5	Trans-1,2-Dichloroethene	5	5	U
78-87-5	1,2-Dichloropropane	5	5	U
10061-01-5	Cis-1,3-Dichloropropene	5	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	5	U
100-41-4	Ethylbenzene	5	5	U
591-78-6	2-Hexanone	10	10	U
75-09-2	Methylene Chloride	10	10	U
108-10-1	4-Methyl-2-Pentanone	10	10	U
100-42-5	Styrene	5	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	5	U
127-18-4	Tetrachloroethene	5	5	U
108-88-3	Toluene	5	5	U
71-55-6	1,1,1-Trichloroethane	5	5	U
79-00-5	1,1,2-Trichloroethane	5	5	U
79-01-6	Trichloroethene	5	5	U
75-01-4	Vinyl Chloride	10	10	U
1330-20-7	Xylene (Total)	5	5	U

2A  
SW-846 LEACHATE VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: IEA-NC

Method: TCLP 8240

Lab Code: IEA

Case No.: 2436-001

SDG No.: 07403

	CLIENT SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01	ZHE951	93	96	93		0
02	SA02-0-IEA-02	93	96	90		0
03	SA02-0-IEA-01	93	96	87		0
04	SA04-0-IEA-02	93	96	86		0
05	SA04-0-IEA-01	94	95	94		0
06	SA04-0-IEA-01LS	98	96	99		0
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

QC LIMITS

SMC1 (TOL) = Toluene-d8	(88-110)
SMC2 (BFB) = Bromofluorobenzene	(86-115)
SMC3 (DCE) = 1,2-Dichloroethane-d4	(76-114)

# Column to be used to flag recovery values

\* Values outside of QC limits.

D System Monitoring Compound diluted out

2A  
SW-846 WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: IEA-NC

Method: 8240

Lab Code: IEA

Case No.: 2436-001

SDG No.: 07403

CLIENT SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01 VBLK9V	92	96	94		0
02 VBLK9W	95	96	92		0
03 VBLK9X	93	94	91		0
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

QC LIMITS

SMC1 (TOL) = Toluene-d8 (88-110)  
SMC2 (BFB) = Bromofluorobenzene (86-115)  
SMC3 (DCE) = 1,2-Dichloroethane-d4 (76-114)

# Column to be used to flag recovery values

\* Values outside of QC limits.

D System Monitoring Compound diluted out

2B  
SW-846 SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: IEA-NC                  Method: 8260  
 Lab Code: IEA                  Case No.: 2436-001                  SDG No.: 07403  
 Level: (low/med) LOW

	CLIENT SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01	VBLKK4	103	106	104		0
02	QA-3MS	98	91	95		0
03	QA-3MSD	98	81	93		0
04	QA-3	96	82	95		0
05	VBLKK5	103	101	97		0
06	T12-S-IEA	85	81	106		0
07						
08						
09						
10						
11						
12						
13						
14						
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16						
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22						
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27						
28						
29						
30						

QC LIMITS

SMC1 (TOL) = Toluene-d8                  (73-125)  
 SMC2 (BFB) = Bromofluorobenzene                  (63-134)  
 SMC3 (DCE) = 1,2-Dichloroethane-d4                  (81-125)

# Column to be used to flag recovery values

\* Values outside of QC limits.

D System Monitoring Compound diluted out

2B  
SW-846 SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: IEA-NC

Method: 8260

Lab Code: IEA

Case No.: 2436-001

SDG No.: 07403

Level: (low/med) MED

	CLIENT SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01	VBLKJ3	94	97	86		0
02	D01-S-IEA	19D	18D	16D		0
03	SA04-S-IEA	139D	147D	44D		0
04	SA02-S-IEA	127D	142D	38D		0
05	VBLKJ4	97	98	96		0
06	KP01-S-IEA	49D	50D	44D		0
07	D02-S-IEA	51D	53D	46D		0
08	SA04-0-IEA-01	3900D	1800D	0D		0
09	SA04-0-IEA-02	600D	0D	0D		0
10	KP01-S-IEAMS	49D	46D	46D		0
11	KP01-S-IEAMSD	48D	50D	42D		0
12	SA02-0-IEA-01	76D	82D	0D		0
13	VBLKJ5	97	101	95		0
14	SA02-0-IEA-02	400D	540D	0D		0
15	VBLKJ6	100	113	88		0
16	SA01-S-IEA-02	22D	21D	19D		0
17	SA01-S-IEA-01	113D	151D	0D		0
18	SP01-S-IEA	120D	12D	0D		0
19	SP02-S-IEA	102D	106D	0D		0
20						
21						
22						
23						
24						
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27						
28						
29						
30						

QC LIMITS

SMC1 (TOL) = Toluene-d8	(73-125)
SMC2 (BFB) = Bromofluorobenzene	(63-134)
SMC3 (DCE) = 1,2-Dichloroethane-d4	(81-125)

# Column to be used to flag recovery values

\* Values outside of QC limits.

D System Monitoring Compound diluted out

3B  
SW-846 SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: IEA-NC

Method: 8260

Lab Code: IEA

Case No.: 2436-001

SDG No.: 07403

Matrix Spike - Client Sample No.: QA-3 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	56	0.0	56	100	59-172
Trichloroethene	56	0.0	49	88	62-137
Benzene	56	0.0	52	93	66-142
Toluene	56	0.0	48	86	59-139
Chlorobenzene	56	0.0	51	91	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
1,1-Dichloroethene	56	56	100	0.0	22	59-172
Trichloroethene	56	53	95	8.0	24	62-137
Benzene	56	57	102	9.0	21	66-142
Toluene	56	53	95	10	21	59-139
Chlorobenzene	56	54	96	5.0	21	60-133

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits.

D Spike compound diluted out.

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

COMMENTS: \_\_\_\_\_

3B  
SW-846 SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: IEA-NC

Method: 8260

Lab Code: IEA

Case No.: 2436-001

SDG No.: 07403

Matrix Spike - Client Sample No.: KP01-S-IEA Level: (low/med) MED

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	7700	0.0	5300	69 D	59-172
Trichloroethene	7700	0.0	7800	101 D	62-137
Benzene	7700	0.0	7900	102 D	66-142
Toluene	7700	2700	10000	95 D	59-139
Chlorobenzene	7700	0.0	8600	112 D	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
1,1-Dichloroethene	7700	4300	56 D	21	22	59-172
Trichloroethene	7700	7800	101 D	0.0	24	62-137
Benzene	7700	7700	100 D	2.0	21	66-142
Toluene	7700	10000	95 D	0.0	21	59-139
Chlorobenzene	7700	9000	117 D	4.0	21	60-133

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits.

D Spike compound diluted out.

RPD: 0 out of 5 outside limits

Spike Recovery: 1 out of 10 outside limits

COMMENTS: \_\_\_\_\_

3A  
SW-846 LEACHATE VOLATILE SPIKE RECOVERY

Lab Name: IEA-NC

Method: TCLP 8240

Lab Code: IEA

Case No.: 2436-001

SDG No.: 07403

Leachate Spike - Client Sample No.: SA04-0-IEA-01

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	LS CONCENTRATION (mg/L)	LS % REC
Vinyl Chloride	1000	0.0	930	93
1,1-Dichloroethene	1000	0.0	910	91
Chloroform	1000	100	870	77
1,2-Dichloroethane	1000	0.0	840	84
2-Butanone	1000	1100	2000	91
Carbon Tetrachloride	1000	0.0	870	87
Trichloroethene	1000	0.0	950	95
Benzene	1000	250	1100	85
Tetrachloroethene	1000	0.0	1000	100
Chlorobenzene	1000	0.0	880	88

COMMENTS: \_\_\_\_\_  
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4A  
SW-846 VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKJ3

Lab Name: IEA-NC                          Method: 8260  
Lab Code: IEA                              Case No.: 2436-001                          SDG No.: 07403  
Lab File ID: 0730J03.D                      Lab Sample ID: VBLKJ3  
Date Analyzed: 07/30/97                      Time Analyzed: 23:13  
GC Column: DB-624                          ID: 0.53 (mm)                          Heated Purge: (Y/N) N  
Instrument ID: MSD10

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	D01-S-IEA	970740303	0730J08.D	02:56
02	SA04-S-IEA	970740302	0730J09.D	03:33
03	SA02-S-IEA	970740305	0730J10.D	04:10
04				
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COMMENTS: \_\_\_\_\_

4A  
SW-846 VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKJ4

Lab Name: IEA-NC                  Method: 8260  
Lab Code: IEA                  Case No.: 2436-001                  SDG No.: 07403  
Lab File ID: 0731102.D                  Lab Sample ID: VBLKJ4  
Date Analyzed: 07/31/97                  Time Analyzed: 09:04  
GC Column: DB-624                  ID: 0.53 (mm)                  Heated Purge: (Y/N) N  
Instrument ID: MSD10

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	KP01-S-IEA	970740304	0731105.D	11:43
02	D02-S-IEA	970740301	0731106.D	12:31
03	SA04-0-IEA-01	970740311	0731109.D	14:49
04	SA04-0-IEA-02	970740312	0731110.D	15:43
05	KP01-S-IEAMS	970740304MS	0731111.D	16:28
06	KP01-S-IEAMSD	970740304MSD	0731112.D	17:14
07	SA02-0-IEA-01	970740313	0731114.D	19:00
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COMMENTS: \_\_\_\_\_

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4A  
SW-846 VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKJ5

Lab Name: IEA-NC                  Method: 8260  
Lab Code: IEA                  Case No.: 2436-001                  SDG No.: 07403  
Lab File ID: 0731J02.D                  Lab Sample ID: VBLKJ5  
Date Analyzed: 07/31/97                  Time Analyzed: 21:28  
GC Column: DB-624                  ID: 0.53 (mm)                  Heated Purge: (Y/N) N  
Instrument ID: MSD10

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	SA02-0-IEA-02	970740314	0731J03.D	22:14
02				
03				
04				
05				
06				
07				
08				
09				
10				
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COMMENTS: \_\_\_\_\_  
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4A  
SW-846 VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKJ6

Lab Name: IEA-NC	Method: 8260	
Lab Code: IEA	Case No.: 2436-001	SDG No.: 07403
Lab File ID: 0801104.D	Lab Sample ID: VBLKJ6	
Date Analyzed: 08/01/97	Time Analyzed: 10:51	
GC Column: DB-624	ID: 0.53 (mm)	Heated Purge: (Y/N) N
Instrument ID: MSD10		

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01 SA01-S-IEA-02	970740307	0801106.D	12:18
02 SA01-S-IEA-01	970740308	0801107.D	12:56
03 SP01-S-IEA	970740309	0801108.D	14:20
04 SP02-S-IEA	970740310	0801109.D	15:06
05			
06			
07			
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COMMENTS: \_\_\_\_\_  
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4A  
SW-846 VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKK4

Lab Name: IEA-NC Method: 8260

Lab Code: IEA Case No.: 2436-001 SDG No.: 07403

Lab File ID: 0729K03.D Lab Sample ID: VBLKK4

Date Analyzed: 07/29/97 Time Analyzed: 10:58

GC Column: DB-624 ID: .530 (mm) Heated Purge: (Y/N) Y

Instrument ID: MSD11

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	QA-3MS	970747402MS	0729K05.D	12:19
02	QA-3MSD	970747402MSD	0729K06.D	12:57
03	QA-3	970747402	0729K07.D	13:35
04				
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COMMENTS: \_\_\_\_\_  
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4A  
SW-846 VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKK5

Lab Name: IEA-NC	Method: 8260	
Lab Code: IEA	Case No.: 2436-001	SDG No.: 07403
Lab File ID: 0729V02.D	Lab Sample ID: VBLKK5	
Date Analyzed: 07/29/97	Time Analyzed: 21:42	
GC Column: DB-624	ID: .530 (mm)	Heated Purge: (Y/N) Y
Instrument ID: MSD11		

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	T12-S-IEA	970740306	0729V14.D	05:22
02				
03				
04				
05				
06				
07				
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COMMENTS: \_\_\_\_\_

4A  
SW-846 VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLK9V

Lab Name: IEA-NC      Method: 8240  
Lab Code: IEA      Case No.: 2436-001      SDG No.: 07403  
Lab File ID: 0811I02.D      Lab Sample ID: VBLK9V  
Date Analyzed: 08/11/97      Time Analyzed: 22:09  
GC Column: DB-624      ID: .541(mm)      Heated Purge: (Y/N) N  
Instrument ID: MSD9

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	ZHE951	ZHE951	0811I03.D	23:00
02				
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04				
05				
06				
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COMMENTS: \_\_\_\_\_  
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4A  
SW-846 VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLK9W

Lab Name: IEA-NC      Method: 8240

Lab Code: IEA      Case No.: 2436-001      SDG No.: 07403

Lab File ID: 0812903.D      Lab Sample ID: VBLK9W

Date Analyzed: 08/12/97      Time Analyzed: 10:49

GC Column: DB-624      ID: .541(mm)      Heated Purge: (Y/N) N

Instrument ID: MSD9

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	SA02-0-IEA-02	970740318	0812913.D	17:28
02	SA02-0-IEA-01	970740317	0812914.D	18:05
03	SA04-0-IEA-02	970740316	0812915.D	18:43
04				
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COMMENTS: \_\_\_\_\_  
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4A  
SW-846 VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLK9X

Lab Name: IEA-NC

Method: 8240

Lab Code: IEA

Case No.: 2436-001

SDG No.: 07403

Lab File ID: 0812I02.D

Lab Sample ID: VBLK9X

Date Analyzed: 08/12/97

Time Analyzed: 22:37

GC Column: DB-624 ID: .541(mm)

Heated Purge: (Y/N) N

Instrument ID: MSD9

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	SA04-0-IEA-01	970740315	0812I03.D	23:42
02	SA04-0-IEA-01LS	970740315LS	0812I04.D	00:19
03				
04				
05				
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COMMENTS: \_\_\_\_\_

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number: 2436-001  
 IEA Sample Number: 9707403 Date Received: N/A  
 Client Name: Focus Environmental, Inc. Date Sampled: N/A  
 Client Project I.D.: 119603 ACS Site Date Extracted: 07/24/97  
 Sample Identification: QC Blank (SVB898) Date Analyzed: 08/02/97  
 Matrix: Solid Analysis By: Van Lare  
 Moisture Correction Factor: 1.00 Dilution Factor: 1.0

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	Acenaphthene	330	BQL
2	Acenaphthylene	330	BQL
3	Anthracene	330	BQL
4	Benzoic acid	1600	BQL
5	Benzo(a)anthracene	330	BQL
6	Benzo(b)fluoranthene	330	BQL
7	Benzo(k)fluoranthene	330	BQL
8	Benzo(g,h,i)perylene	330	BQL
9	Benzo(a)pyrene	330	BQL
10	Benzyl alcohol	660	BQL
11	bis(2-Chloroethoxy)methane	330	BQL
12	bis(2-Chloroethyl)ether	330	BQL
13	bis(2-Chloroisopropyl)ether	330	BQL
14	bis(2-Ethylhexyl)phthalate	330	BQL
15	4-Bromophenyl phenyl ether	330	BQL
16	Benzyl butyl phthalate	330	BQL
17	4-Chloroaniline	660	BQL
18	2-Chloronaphthalene	330	BQL
19	4-Chloro-3-methylphenol	660	BQL
20	2-Chlorophenol	330	BQL
21	4-Chlorophenyl phenyl ether	330	BQL
22	Chrysene	330	BQL
23	Dibenzo(a,h)anthracene	330	BQL
24	Dibenzofuran	330	BQL
25	Di-n-butylphthalate	330	BQL
26	1,3-Dichlorobenzene	330	BQL
27	1,4-Dichlorobenzene	330	BQL
28	1,2-Dichlorobenzene	330	BQL
29	3,3'-Dichlorobenzidine	660	BQL
30	2,4-Dichlorophenol	330	BQL
31	Diethyl phthalate	330	BQL
32	2,4-Dimethylphenol	330	BQL
33	Dimethyl phthalate	330	BQL
34	4,6-Dinitro-2-methylphenol	1600	BQL
35	2,4-Dinitrophenol	1600	BQL
36	2,4-Dinitrotoluene	330	BQL
37	2,6-Dinitrotoluene	330	BQL
38	Di-n-octylphthalate	330	BQL
39	Fluoranthene	330	BQL

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001	Date Received:	N/A
IEA Sample Number:	9707403	Date Sampled:	N/A
Client Name:	Focus Environmental, Inc.	Date Extracted:	07/24/97
Client Project I.D.:	119603 ACS Site	Date Analyzed:	08/02/97
Sample Identification:	QC Blank (SVB898)	Analysis By:	Van Lare
Matrix:	Solid	Dilution Factor:	1.0
Moisture Correction Factor:	1.00		

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
40	Fluorene	330	BQL
41	Hexachlorobenzene	330	BQL
42	Hexachlorobutadiene	330	BQL
43	Hexachlorocyclopentadiene	330	BQL
44	Hexachloroethane	330	BQL
45	Indeno(1,2,3-cd)pyrene	330	BQL
46	Isophorone	330	BQL
47	2-Methylnaphthalene	330	BQL
48	2-Methylphenol (o-cresol)	330	BQL
49	4-Methylphenol (p-cresol)	330	BQL
50	Naphthalene	330	BQL
51	2-Nitroaniline	1600	BQL
52	3-Nitroaniline	1600	BQL
53	4-Nitroaniline	1600	BQL
54	Nitrobenzene	330	BQL
55	2-Nitrophenol	330	BQL
56	4-Nitrophenol	1600	BQL
57	N-Nitroso-di-n-propylamine	330	BQL
58	N-Nitrosodiphenylamine (1)	330	BQL
59	Pentachlorophenol	1600	BQL
60	Phenanthrene	330	BQL
61	Phenol	330	BQL
62	Pyrene	330	BQL
63	1,2,4-Trichlorobenzene	330	BQL
64	2,4,5-Trichlorophenol	330	BQL
65	2,4,6-Trichlorophenol	330	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit      N/A = Not Applicable

(1) Cannot be separated from Diphenylamine

(2) Benzoic acid does not recover consistently below a level of 1600ug/Kg.

Corresponding Samples: 9707403-01 through -10

Filename: 0802602

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-01	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/17/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/24/97
Sample Identification:	D02-S-IEA	Date Analyzed:	08/04/97
Matrix:	Soil	Analysis By:	Van Lare
Moisture Correction Factor:	1.22	Dilution Factor:	20

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	Acenaphthene	330	BQL
2	Acenaphthylene	330	BQL
3	Anthracene	330	BQL
4	Benzoic acid	1600	BQL
5	Benzo(a)anthracene	330	BQL
6	Benzo(b)fluoranthene	330	BQL
7	Benzo(k)fluoranthene	330	BQL
8	Benzo(g,h,i)perylene	330	BQL
9	Benzo(a)pyrene	330	BQL
10	Benzyl alcohol	660	BQL
11	bis(2-Chloroethoxy)methane	330	BQL
12	bis(2-Chloroethyl)ether	330	BQL
13	bis(2-Chloroisopropyl)ether	330	BQL
14	bis(2-Ethylhexyl)phthalate	330	55000
15	4-Bromophenyl phenyl ether	330	BQL
16	Benzyl butyl phthalate	330	BQL
17	4-Chloroaniline	660	BQL
18	2-Chloronaphthalene	330	BQL
19	4-Chloro-3-methylphenol	660	BQL
20	2-Chlorophenol	330	BQL
21	4-Chlorophenyl phenyl ether	330	BQL
22	Chrysene	330	BQL
23	Dibenzo(a,h)anthracene	330	BQL
24	Dibenzofuran	330	BQL
25	Di-n-butylphthalate	330	11000
26	1,3-Dichlorobenzene	330	BQL
27	1,4-Dichlorobenzene	330	BQL
28	1,2-Dichlorobenzene	330	BQL
29	3,3'-Dichlorobenzidine	660	BQL
30	2,4-Dichlorophenol	330	BQL
31	Diethyl phthalate	330	BQL
32	2,4-Dimethylphenol	330	BQL
33	Dimethyl phthalate	330	BQL
34	4,6-Dinitro-2-methylphenol	1600	BQL
35	2,4-Dinitrophenol	1600	BQL
36	2,4-Dinitrotoluene	330	BQL
37	2,6-Dinitrotoluene	330	BQL
38	Di-n-octylphthalate	330	BQL
39	Fluoranthene	330	BQL

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001	Date Received:	07/21/97
IEA Sample Number:	9707403-01	Date Sampled:	07/17/97
Client Name:	Focus Environmental, Inc.	Date Extracted:	07/24/97
Client Project I.D.:	119603 ACS Site	Date Analyzed:	08/04/97
Sample Identification:	D02-S-IEA	Analysis By:	Van Lare
Matrix:	Soil	Dilution Factor:	20
Moisture Correction Factor:	1.22		

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
40	Fluorene	330	BQL
41	Hexachlorobenzene	330	BQL
42	Hexachlorobutadiene	330	BQL
43	Hexachlorocyclopentadiene	330	BQL
44	Hexachloroethane	330	BQL
45	Indeno(1,2,3-cd)pyrene	330	BQL
46	Isophorone	330	BQL
47	2-Methylnaphthalene	330	16000
48	2-Methylphenol (o-cresol)	330	BQL
49	4-Methylphenol (p-cresol)	330	BQL
50	Naphthalene	330	16000
51	2-Nitroaniline	1600	BQL
52	3-Nitroaniline	1600	BQL
53	4-Nitroaniline	1600	BQL
54	Nitrobenzene	330	BQL
55	2-Nitrophenol	330	BQL
56	4-Nitrophenol	1600	BQL
57	N-Nitroso-di-n-propylamine	330	BQL
58	N-Nitrosodiphenylamine (1)	330	BQL
59	Pentachlorophenol	1600	BQL
60	Phanthrene	330	BQL
61	Phenol	330	BQL
62	Pyrene	330	BQL
63	1,2,4-Trichlorobenzene	330	BQL
64	2,4,5-Trichlorophenol	330	BQL
65	2,4,6-Trichlorophenol	330	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

(1) Cannot be separated from Diphenylamine

(2) Benzoic acid does not recover consistently below a level of 1600ug/Kg.

Sample was diluted due to the high concentration of target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-02	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/17/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/24/97
Sample Identification:	SA04-S-IEA	Date Analyzed:	08/04/97
Matrix:	Soil	Analysis By:	Van Lare
Moisture Correction Factor:	1.23	Dilution Factor:	100

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Acenaphthene	330	BQL
2	Acenaphthylene	330	BQL
3	Anthracene	330	BQL
4	Benzoic acid	1600	BQL
5	Benzo(a)anthracene	330	BQL
6	Benzo(b)fluoranthene	330	BQL
7	Benzo(k)fluoranthene	330	BQL
8	Benzo(g,h,i)perylene	330	BQL
9	Benzo(a)pyrene	330	BQL
10	Benzyl alcohol	660	BQL
11	bis(2-Chloroethoxy)methane	330	BQL
12	bis(2-Chloroethyl)ether	330	BQL
13	bis(2-Chloroisopropyl)ether	330	BQL
14	bis(2-Ethylhexyl)phthalate	330	BQL
15	4-Bromophenyl phenyl ether	330	BQL
16	Benzyl butyl phthalate	330	BQL
17	4-Chloroaniline	660	BQL
18	2-Chloronaphthalene	330	BQL
19	4-Chloro-3-methylphenol	660	BQL
20	2-Chlorophenol	330	BQL
21	4-Chlorophenyl phenyl ether	330	BQL
22	Chrysene	330	BQL
23	Dibenzo(a,h)anthracene	330	BQL
24	Dibenzofuran	330	BQL
25	Di-n-butylphthalate	330	BQL
26	1,3-Dichlorobenzene	330	BQL
27	1,4-Dichlorobenzene	330	BQL
28	1,2-Dichlorobenzene	330	210000
29	3,3'-Dichlorobenzidine	660	BQL
30	2,4-Dichlorophenol	330	BQL
31	Diethyl phthalate	330	BQL
32	2,4-Dimethylphenol	330	88000
33	Dimethyl phthalate	330	BQL
34	4,6-Dinitro-2-methylphenol	1600	BQL
35	2,4-Dinitrophenol	1600	BQL
36	2,4-Dinitrotoluene	330	BQL
37	2,6-Dinitrotoluene	330	BQL
38	Di-n-octylphthalate	330	BQL
39	Fluoranthene	330	BQL

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001	Date Received:	07/21/97
IEA Sample Number:	9707403-02	Date Sampled:	07/17/97
Client Name:	Focus Environmental, Inc.	Date Extracted:	07/24/97
Client Project I.D.:	119603 ACS Site	Date Analyzed:	08/04/97
Sample Identification:	SA04-S-IEA	Analysis By:	Van Lare
Matrix:	Soil	Dilution Factor:	100
Moisture Correction Factor:	1.23		

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
40	Fluorene	330	BQL
41	Hexachlorobenzene	330	BQL
42	Hexachlorobutadiene	330	BQL
43	Hexachlorocyclopentadiene	330	BQL
44	Hexachloroethane	330	BQL
45	Indeno(1,2,3-cd)pyrene	330	BQL
46	Isophorone	330	BQL
47	2-Methylnaphthalene	330	BQL
48	2-Methylphenol (o-cresol)	330	120000
49	4-Methylphenol (p-cresol)	330	180000
50	Naphthalene	330	BQL
51	2-Nitroaniline	1600	BQL
52	3-Nitroaniline	1600	BQL
53	4-Nitroaniline	1600	BQL
54	Nitrobenzene	330	BQL
55	2-Nitrophenol	330	BQL
56	4-Nitrophenol	1600	BQL
57	N-Nitroso-di-n-propylamine	330	BQL
58	N-Nitrosodiphenylamine (1)	330	BQL
59	Pentachlorophenol	1600	BQL
60	Phenanthrene	330	BQL
61	Phenol	330	170000
62	Pyrene	330	BQL
63	1,2,4-Trichlorobenzene	330	BQL
64	2,4,5-Trichlorophenol	330	BQL
65	2,4,6-Trichlorophenol	330	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

(1) Cannot be separated from Diphenylamine

(2) Benzoic acid does not recover consistently below a level of 1600ug/Kg.

Sample was diluted due to the high concentration of target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-03	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/17/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/24/97
Sample Identification:	D01-S-IEA	Date Analyzed:	08/04/97
Matrix:	Soil	Analysis By:	Van Lare
Moisture Correction Factor:	1.16	Dilution Factor:	80

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	Acenaphthene	330	BQL
2	Acenaphthylene	330	BQL
3	Anthracene	330	BQL
4	Benzoic acid	1600	BQL
5	Benzo(a)anthracene	330	BQL
6	Benzo(b)fluoranthene	330	BQL
7	Benzo(k)fluoranthene	330	BQL
8	Benzo(g,h,i)perylene	330	BQL
9	Benzo(a)pyrene	330	BQL
10	Benzyl alcohol	660	BQL
11	bis(2-Chloroethoxy)methane	330	BQL
12	bis(2-Chloroethyl)ether	330	BQL
13	bis(2-Chloroisopropyl)ether	330	BQL
14	bis(2-Ethylhexyl)phthalate	330	120000
15	4-Bromophenyl phenyl ether	330	BQL
16	Benzyl butyl phthalate	330	BQL
17	4-Chloroaniline	660	BQL
18	2-Chloronaphthalene	330	BQL
19	4-Chloro-3-methylphenol	660	BQL
20	2-Chlorophenol	330	BQL
21	4-Chlorophenyl phenyl ether	330	BQL
22	Chrysene	330	BQL
23	Dibenzo(a,h)anthracene	330	BQL
24	Dibenzofuran	330	BQL
25	Di-n-butylphthalate	330	79000
26	1,3-Dichlorobenzene	330	BQL
27	1,4-Dichlorobenzene	330	BQL
28	1,2-Dichlorobenzene	330	BQL
29	3,3'-Dichlorobenzidine	660	BQL
30	2,4-Dichlorophenol	330	BQL
31	Diethyl phthalate	330	BQL
32	2,4-Dimethylphenol	330	BQL
33	Dimethyl phthalate	330	BQL
34	4,6-Dinitro-2-methylphenol	1600	BQL
35	2,4-Dinitrophenol	1600	BQL
36	2,4-Dinitrotoluene	330	BQL
37	2,6-Dinitrotoluene	330	BQL
38	Di-n-octylphthalate	330	BQL
39	Fluoranthene	330	BQL

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-03	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/17/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/24/97
Sample Identification:	D01-S-IEA	Date Analyzed:	08/04/97
Matrix:	Soil	Analysis By:	Van Lare
Moisture Correction Factor:	1.16	Dilution Factor:	80

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
40	Fluorene	330	BQL
41	Hexachlorobenzene	330	BQL
42	Hexachlorobutadiene	330	BQL
43	Hexachlorocyclopentadiene	330	BQL
44	Hexachloroethane	330	BQL
45	Indeno(1,2,3-cd)pyrene	330	BQL
46	Isophorone	330	67000
47	2-Methylnaphthalene	330	BQL
48	2-Methylphenol (o-cresol)	330	BQL
49	4-Methylphenol (p-cresol)	330	BQL
50	Naphthalene	330	51000
51	2-Nitroaniline	1600	BQL
52	3-Nitroaniline	1600	BQL
53	4-Nitroaniline	1600	BQL
54	Nitrobenzene	330	BQL
55	2-Nitrophenol	330	BQL
56	4-Nitrophenol	1600	BQL
57	N-Nitroso-di-n-propylamine	330	BQL
58	N-Nitrosodiphenylamine (1)	330	BQL
59	Pentachlorophenol	1600	BQL
60	Phenanthrene	330	BQL
61	Phenol	330	BQL
62	Pyrene	330	BQL
63	1,2,4-Trichlorobenzene	330	BQL
64	2,4,5-Trichlorophenol	330	BQL
65	2,4,6-Trichlorophenol	330	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

(1) Cannot be separated from Diphenylamine

(2) Benzoic acid does not recover consistently below a level of 1600ug/Kg. Sample was diluted due to the high concentration of target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-04	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/17/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/24/97
Sample Identification:	KP01-S-IEA	Date Analyzed:	08/04/97
Matrix:	Soil	Analysis By:	Van Lare
Moisture Correction Factor:	1.23	Dilution Factor:	40

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	Acenaphthene	330	BQL
2	Acenaphthylene	330	BQL
3	Anthracene	330	BQL
4	Benzoic acid	1600	BQL
5	Benzo(a)anthracene	330	BQL
6	Benzo(b)fluoranthene	330	BQL
7	Benzo(k)fluoranthene	330	BQL
8	Benzo(g,h,i)perylene	330	BQL
9	Benzo(a)pyrene	330	BQL
10	Benzyl alcohol	660	BQL
11	bis(2-Chloroethoxy)methane	330	BQL
12	bis(2-Chloroethyl)ether	330	BQL
13	bis(2-Chloroisopropyl)ether	330	BQL
14	bis(2-Ethylhexyl)phthalate	330	130000
15	4-Bromophenyl phenyl ether	330	BQL
16	Benzyl butyl phthalate	330	BQL
17	4-Chloroaniline	660	BQL
18	2-Chloronaphthalene	330	BQL
19	4-Chloro-3-methylphenol	660	BQL
20	2-Chlorophenol	330	BQL
21	4-Chlorophenyl phenyl ether	330	BQL
22	Chrysene	330	BQL
23	Dibenzo(a,h)anthracene	330	BQL
24	Dibenzofuran	330	BQL
25	Di-n-butylphthalate	330	BQL
26	1,3-Dichlorobenzene	330	BQL
27	1,4-Dichlorobenzene	330	BQL
28	1,2-Dichlorobenzene	330	BQL
29	3,3'-Dichlorobenzidine	660	BQL
30	2,4-Dichlorophenol	330	BQL
31	Diethyl phthalate	330	BQL
32	2,4-Dimethylphenol	330	BQL
33	Dimethyl phthalate	330	BQL
34	4,6-Dinitro-2-methylphenol	1600	BQL
35	2,4-Dinitrophenol	1600	BQL
36	2,4-Dinitrotoluene	330	BQL
37	2,6-Dinitrotoluene	330	BQL
38	Di-n-octylphthalate	330	BQL
39	Fluoranthene	330	BQL

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-04	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/17/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/24/97
Sample Identification:	KP01-S-IEA	Date Analyzed:	08/04/97
Matrix:	Soil	Analysis By:	Van Lare
Moisture Correction Factor:	1.23	Dilution Factor:	40

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
40	Fluorene	330	BQL
41	Hexachlorobenzene	330	BQL
42	Hexachlorobutadiene	330	BQL
43	Hexachlorocyclopentadiene	330	BQL
44	Hexachloroethane	330	BQL
45	Indeno(1,2,3-cd)pyrene	330	BQL
46	Isophorone	330	BQL
47	2-Methylnaphthalene	330	BQL
48	2-Methylphenol (o-cresol)	330	BQL
49	4-Methylphenol (p-cresol)	330	BQL
50	Naphthalene	330	BQL
51	2-Nitroaniline	1600	BQL
52	3-Nitroaniline	1600	BQL
53	4-Nitroaniline	1600	BQL
54	Nitrobenzene	330	BQL
55	2-Nitrophenol	330	BQL
56	4-Nitrophenol	1600	BQL
57	N-Nitroso-di-n-propylamine	330	BQL
58	N-Nitrosodiphenylamine (1)	330	BQL
59	Pentachlorophenol	1600	BQL
60	Phenanthrene	330	BQL
61	Phenol	330	BQL
62	Pyrene	330	BQL
63	1,2,4-Trichlorobenzene	330	BQL
64	2,4,5-Trichlorophenol	330	BQL
65	2,4,6-Trichlorophenol	330	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

(1) Cannot be separated from Diphenylamine

(2) Benzoic acid does not recover consistently below a level of 1600ug/Kg. Sample was diluted due to the high concentration of target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number: 2436-001  
 IEA Sample Number: 9707403-05 Date Received: 07/21/97  
 Client Name: Focus Environmental, Inc. Date Sampled: 07/17/97  
 Client Project I.D.: 119603 ACS Site Date Extracted: 07/24/97  
 Sample Identification: SA02-S-IEA Date Analyzed: 08/04/97  
 Matrix: Soil Analysis By: Van Lare  
 Moisture Correction Factor: 1.37 Dilution Factor: 80

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	Acenaphthene	330	BQL
2	Acenaphthylene	330	BQL
3	Anthracene	330	BQL
4	Benzoic acid	1600	BQL
5	Benzo(a)anthracene	330	BQL
6	Benzo(b)fluoranthene	330	BQL
7	Benzo(k)fluoranthene	330	BQL
8	Benzo(g,h,i)perylene	330	BQL
9	Benzo(a)pyrene	330	BQL
10	Benzyl alcohol	660	BQL
11	bis(2-Chloroethoxy)methane	330	BQL
12	bis(2-Chloroethyl)ether	330	BQL
13	bis(2-Chloroisopropyl)ether	330	BQL
14	bis(2-Ethylhexyl)phthalate	330	240000
15	4-Bromophenyl phenyl ether	330	BQL
16	Benzyl butyl phthalate	330	BQL
17	4-Chloroaniline	660	BQL
18	2-Chloronaphthalene	330	BQL
19	4-Chloro-3-methylphenol	660	BQL
20	2-Chlorophenol	330	BQL
21	4-Chlorophenyl phenyl ether	330	BQL
22	Chrysene	330	BQL
23	Dibenzo(a,h)anthracene	330	BQL
24	Dibenzofuran	330	BQL
25	Di-n-butylphthalate	330	84000
26	1,3-Dichlorobenzene	330	BQL
27	1,4-Dichlorobenzene	330	BQL
28	1,2-Dichlorobenzene	330	BQL
29	3,3'-Dichlorobenzidine	660	BQL
30	2,4-Dichlorophenol	330	BQL
31	Diethyl phthalate	330	BQL
32	2,4-Dimethylphenol	330	BQL
33	Dimethyl phthalate	330	110000
34	4,6-Dinitro-2-methylphenol	1600	BQL
35	2,4-Dinitrophenol	1600	BQL
36	2,4-Dinitrotoluene	330	BQL
37	2,6-Dinitrotoluene	330	BQL
38	Di-n-octylphthalate	330	BQL
39	Fluoranthene	330	BQL

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-05	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/17/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/24/97
Sample Identification:	SA02-S-IEA	Date Analyzed:	08/04/97
Matrix:	Soil	Analysis By:	Van Lare
Moisture Correction Factor:	1.37	Dilution Factor:	80

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
40	Fluorene	330	BQL
41	Hexachlorobenzene	330	BQL
42	Hexachlorobutadiene	330	BQL
43	Hexachlorocyclopentadiene	330	BQL
44	Hexachloroethane	330	BQL
45	Indeno(1,2,3-cd)pyrene	330	BQL
46	Isophorone	330	210000
47	2-Methylnaphthalene	330	58000
48	2-Methylphenol (o-cresol)	330	BQL
49	4-Methylphenol (p-cresol)	330	BQL
50	Naphthalene	330	140000
51	2-Nitroaniline	1600	BQL
52	3-Nitroaniline	1600	BQL
53	4-Nitroaniline	1600	BQL
54	Nitrobenzene	330	BQL
55	2-Nitrophenol	330	BQL
56	4-Nitrophenol	1600	BQL
57	N-Nitroso-di-n-propylamine	330	BQL
58	N-Nitrosodiphenylamine (1)	330	BQL
59	Pentachlorophenol	1600	BQL
60	Phenanthrene	330	BQL
61	Phenol	330	BQL
62	Pyrene	330	BQL
63	1,2,4-Trichlorobenzene	330	BQL
64	2,4,5-Trichlorophenol	330	BQL
65	2,4,6-Trichlorophenol	330	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

(1) Cannot be separated from Diphenylamine

(2) Benzoic acid does not recover consistently below a level of 1600ug/Kg.  
Sample was diluted due to the high concentration of target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-06	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/18/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/24/97
Sample Identification:	T12-S-IEA	Date Analyzed:	08/04/97
Matrix:	Soil	Analysis By:	Van Lare
Moisture Correction Factor:	1.09	Dilution Factor:	5.0

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	Acenaphthene	330	BQL
2	Acenaphthylene	330	BQL
3	Anthracene	330	BQL
4	Benzoic acid	1600	BQL
5	Benzo(a)anthracene	330	BQL
6	Benzo(b)fluoranthene	330	BQL
7	Benzo(k)fluoranthene	330	BQL
8	Benzo(g,h,i)perylene	330	BQL
9	Benzo(a)pyrene	330	BQL
10	Benzyl alcohol	660	BQL
11	bis(2-Chloroethoxy)methane	330	BQL
12	bis(2-Chloroethyl)ether	330	BQL
13	bis(2-Chloroisopropyl)ether	330	BQL
14	bis(2-Ethylhexyl)phthalate	330	9300
15	4-Bromophenyl phenyl ether	330	BQL
16	Benzyl butyl phthalate	330	BQL
17	4-Chloroaniline	660	BQL
18	2-Chloronaphthalene	330	BQL
19	4-Chloro-3-methylphenol	660	BQL
20	2-Chlorophenol	330	BQL
21	4-Chlorophenyl phenyl ether	330	BQL
22	Chrysene	330	BQL
23	Dibenzo(a,h)anthracene	330	BQL
24	Dibenzofuran	330	BQL
25	Di-n-butylphthalate	330	BQL
26	1,3-Dichlorobenzene	330	BQL
27	1,4-Dichlorobenzene	330	BQL
28	1,2-Dichlorobenzene	330	BQL
29	3,3'-Dichlorobenzidine	660	BQL
30	2,4-Dichlorophenol	330	BQL
31	Diethyl phthalate	330	BQL
32	2,4-Dimethylphenol	330	BQL
33	Dimethyl phthalate	330	BQL
34	4,6-Dinitro-2-methylphenol	1600	BQL
35	2,4-Dinitrophenol	1600	BQL
36	2,4-Dinitrotoluene	330	BQL
37	2,6-Dinitrotoluene	330	BQL
38	Di-n-octylphthalate	330	BQL
39	Fluoranthene	330	BQL

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001	Date Received:	07/21/97
IEA Sample Number:	9707403-06	Date Sampled:	07/18/97
Client Name:	Focus Environmental, Inc.	Date Extracted:	07/24/97
Client Project I.D.:	119603 ACS Site	Date Analyzed:	08/04/97
Sample Identification:	T12-S-IEA	Analysis By:	Van Lare
Matrix:	Soil	Dilution Factor:	5.0
Moisture Correction Factor:	1.09		

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
40	Fluorene	330	BQL
41	Hexachlorobenzene	330	BQL
42	Hexachlorobutadiene	330	BQL
43	Hexachlorocyclopentadiene	330	BQL
44	Hexachloroethane	330	BQL
45	Indeno(1,2,3-cd)pyrene	330	BQL
46	Isophorone	330	BQL
47	2-Methylnaphthalene	330	BQL
48	2-Methylphenol (o-cresol)	330	BQL
49	4-Methylphenol (p-cresol)	330	BQL
50	Naphthalene	330	BQL
51	2-Nitroaniline	1600	BQL
52	3-Nitroaniline	1600	BQL
53	4-Nitroaniline	1600	BQL
54	Nitrobenzene	330	BQL
55	2-Nitrophenol	330	BQL
56	4-Nitrophenol	1600	BQL
57	N-Nitroso-di-n-propylamine	330	BQL
58	N-Nitrosodiphenylamine (1)	330	BQL
59	Pentachlorophenol	1600	BQL
60	Phenanthrene	330	BQL
61	Phenol	330	BQL
62	Pyrene	330	BQL
63	1,2,4-Trichlorobenzene	330	BQL
64	2,4,5-Trichlorophenol	330	BQL
65	2,4,6-Trichlorophenol	330	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

(1) Cannot be separated from Diphenylamine

(2) Benzoic acid does not recover consistently below a level of 1600ug/Kg. Sample was diluted due to the high concentration of target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-07	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/18/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/24/97
Sample Identification:	SA01-S-IEA-02	Date Analyzed:	08/04/97
Matrix:	Soil	Analysis By:	Van Lare
Moisture Correction Factor:	1.06	Dilution Factor:	30

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	Acenaphthene	330	BQL
2	Acenaphthylene	330	BQL
3	Anthracene	330	BQL
4	Benzoic acid	1600	BQL
5	Benzo(a)anthracene	330	BQL
6	Benzo(b)fluoranthene	330	BQL
7	Benzo(k)fluoranthene	330	BQL
8	Benzo(g,h,i)perylene	330	BQL
9	Benzo(a)pyrene	330	BQL
10	Benzyl alcohol	660	BQL
11	bis(2-Chloroethoxy)methane	330	BQL
12	bis(2-Chloroethyl)ether	330	BQL
13	bis(2-Chloroisopropyl)ether	330	BQL
14	bis(2-Ethylhexyl)phthalate	330	15000
15	4-Bromophenyl phenyl ether	330	BQL
16	Benzyl butyl phthalate	330	BQL
17	4-Chloroaniline	660	BQL
18	2-Chloronaphthalene	330	BQL
19	4-Chloro-3-methylphenol	660	BQL
20	2-Chlorophenol	330	BQL
21	4-Chlorophenyl phenyl ether	330	BQL
22	Chrysene	330	BQL
23	Dibenzo(a,h)anthracene	330	BQL
24	Dibenzofuran	330	BQL
25	Di-n-butylphthalate	330	BQL
26	1,3-Dichlorobenzene	330	BQL
27	1,4-Dichlorobenzene	330	BQL
28	1,2-Dichlorobenzene	330	BQL
29	3,3'-Dichlorobenzidine	660	BQL
30	2,4-Dichlorophenol	330	BQL
31	Diethyl phthalate	330	BQL
32	2,4-Dimethylphenol	330	BQL
33	Dimethyl phthalate	330	BQL
34	4,6-Dinitro-2-methylphenol	1600	BQL
35	2,4-Dinitrophenol	1600	BQL
36	2,4-Dinitrotoluene	330	BQL
37	2,6-Dinitrotoluene	330	BQL
38	Di-n-octylphthalate	330	BQL
39	Fluoranthene	330	BQL

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-07	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/18/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/24/97
Sample Identification:	SA01-S-IEA-02	Date Analyzed:	08/04/97
Matrix:	Soil	Analysis By:	Van Lare
Moisture Correction Factor:	1.06	Dilution Factor:	30

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
40	Fluorene	330	BQL
41	Hexachlorobenzene	330	BQL
42	Hexachlorobutadiene	330	BQL
43	Hexachlorocyclopentadiene	330	BQL
44	Hexachloroethane	330	BQL
45	Indeno(1,2,3-cd)pyrene	330	BQL
46	Isophorone	330	BQL
47	2-Methylnaphthalene	330	BQL
48	2-Methylphenol (o-cresol)	330	BQL
49	4-Methylphenol (p-cresol)	330	BQL
50	Naphthalene	330	BQL
51	2-Nitroaniline	1600	BQL
52	3-Nitroaniline	1600	BQL
53	4-Nitroaniline	1600	BQL
54	Nitrobenzene	330	BQL
55	2-Nitrophenol	330	BQL
56	4-Nitrophenol	1600	BQL
57	N-Nitroso-di-n-propylamine	330	BQL
58	N-Nitrosodiphenylamine (1)	330	BQL
59	Pentachlorophenol	1600	BQL
60	Phenanthrene	330	BQL
61	Phenol	330	BQL
62	Pyrene	330	BQL
63	1,2,4-Trichlorobenzene	330	BQL
64	2,4,5-Trichlorophenol	330	BQL
65	2,4,6-Trichlorophenol	330	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

(1) Cannot be separated from Diphenylamine

(2) Benzoic acid does not recover consistently below a level of 1600ug/Kg. Sample was diluted due to the high concentration of non-target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-08	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/18/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/24/97
Sample Identification:	SA01-S-IEA-01	Date Analyzed:	08/04/97
Matrix:	Soil	Analysis By:	Van Lare
Moisture Correction Factor:	1.12	Dilution Factor:	60

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	Acenaphthene	330	BQL
2	Acenaphthylene	330	BQL
3	Anthracene	330	BQL
4	Benzoic acid	1600	BQL
5	Benzo(a)anthracene	330	BQL
6	Benzo(b)fluoranthene	330	BQL
7	Benzo(k)fluoranthene	330	BQL
8	Benzo(g,h,i)perylene	330	BQL
9	Benzo(a)pyrene	330	BQL
10	Benzyl alcohol	660	BQL
11	bis(2-Chloroethoxy)methane	330	BQL
12	bis(2-Chloroethyl)ether	330	BQL
13	bis(2-Chloroisopropyl)ether	330	BQL
14	bis(2-Ethylhexyl)phthalate	330	40000
15	4-Bromophenyl phenyl ether	330	BQL
16	Benzyl butyl phthalate	330	BQL
17	4-Chloroaniline	660	BQL
18	2-Chloronaphthalene	330	BQL
19	4-Chloro-3-methylphenol	660	BQL
20	2-Chlorophenol	330	BQL
21	4-Chlorophenyl phenyl ether	330	BQL
22	Chrysene	330	BQL
23	Dibenzo(a,h)anthracene	330	BQL
24	Dibenzofuran	330	BQL
25	Di-n-butylphthalate	330	BQL
26	1,3-Dichlorobenzene	330	BQL
27	1,4-Dichlorobenzene	330	BQL
28	1,2-Dichlorobenzene	330	BQL
29	3,3'-Dichlorobenzidine	660	BQL
30	2,4-Dichlorophenol	330	BQL
31	Diethyl phthalate	330	BQL
32	2,4-Dimethylphenol	330	BQL
33	Dimethyl phthalate	330	BQL
34	4,6-Dinitro-2-methylphenol	1600	BQL
35	2,4-Dinitrophenol	1600	BQL
36	2,4-Dinitrotoluene	330	BQL
37	2,6-Dinitrotoluene	330	BQL
38	Di-n-octylphthalate	330	BQL
39	Fluoranthene	330	BQL

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-08	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/18/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/24/97
Sample Identification:	SA01-S-IEA-01	Date Analyzed:	08/04/97
Matrix:	Soil	Analysis By:	Van Lare
Moisture Correction Factor:	1.12	Dilution Factor:	60

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
40	Fluorene	330	BQL
41	Hexachlorobenzene	330	BQL
42	Hexachlorobutadiene	330	BQL
43	Hexachlorocyclopentadiene	330	BQL
44	Hexachloroethane	330	BQL
45	Indeno(1,2,3-cd)pyrene	330	BQL
46	Isophorone	330	BQL
47	2-Methylnaphthalene	330	BQL
48	2-Methylphenol (o-cresol)	330	BQL
49	4-Methylphenol (p-cresol)	330	BQL
50	Naphthalene	330	BQL
51	2-Nitroaniline	1600	BQL
52	3-Nitroaniline	1600	BQL
53	4-Nitroaniline	1600	BQL
54	Nitrobenzene	330	BQL
55	2-Nitrophenol	330	BQL
56	4-Nitrophenol	1600	BQL
57	N-Nitroso-di-n-propylamine	330	BQL
58	N-Nitrosodiphenylamine (1)	330	BQL
59	Pentachlorophenol	1600	BQL
60	Phenanthrene	330	BQL
61	Phenol	330	BQL
62	Pyrene	330	BQL
63	1,2,4-Trichlorobenzene	330	BQL
64	2,4,5-Trichlorophenol	330	BQL
65	2,4,6-Trichlorophenol	330	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

(1) Cannot be separated from Diphenylamine

(2) Benzoic acid does not recover consistently below a level of 1600ug/Kg.

Sample was diluted due to the high concentration of non-target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-09	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/18/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/24/97
Sample Identification:	SP01-S-IEA	Date Analyzed:	08/04/97
Matrix:	Soil	Analysis By:	Van Lare
Moisture Correction Factor:	1.20	Dilution Factor:	80

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	Acenaphthene	330	BQL
2	Acenaphthylene	330	BQL
3	Anthracene	330	BQL
4	Benzoic acid	1600	BQL
5	Benzo(a)anthracene	330	BQL
6	Benzo(b)fluoranthene	330	BQL
7	Benzo(k)fluoranthene	330	BQL
8	Benzo(g,h,i)perylene	330	BQL
9	Benzo(a)pyrene	330	BQL
10	Benzyl alcohol	660	BQL
11	bis(2-Chloroethoxy)methane	330	BQL
12	bis(2-Chloroethyl)ether	330	BQL
13	bis(2-Chloroisopropyl)ether	330	BQL
14	bis(2-Ethylhexyl)phthalate	330	230000
15	4-Bromophenyl phenyl ether	330	BQL
16	Benzyl butyl phthalate	330	48000
17	4-Chloroaniline	660	BQL
18	2-Chloronaphthalene	330	BQL
19	4-Chloro-3-methylphenol	660	BQL
20	2-Chlorophenol	330	BQL
21	4-Chlorophenyl phenyl ether	330	BQL
22	Chrysene	330	BQL
23	Dibenzo(a,h)anthracene	330	BQL
24	Dibenzofuran	330	BQL
25	Di-n-butylphthalate	330	82000
26	1,3-Dichlorobenzene	330	BQL
27	1,4-Dichlorobenzene	330	BQL
28	1,2-Dichlorobenzene	330	BQL
29	3,3'-Dichlorobenzidine	660	BQL
30	2,4-Dichlorophenol	330	BQL
31	Diethyl phthalate	330	BQL
32	2,4-Dimethylphenol	330	BQL
33	Dimethyl phthalate	330	BQL
34	4,6-Dinitro-2-methylphenol	1600	BQL
35	2,4-Dinitrophenol	1600	BQL
36	2,4-Dinitrotoluene	330	BQL
37	2,6-Dinitrotoluene	330	BQL
38	Di-n-octylphthalate	330	BQL
39	Fluoranthene	330	BQL

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-09	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/18/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/24/97
Sample Identification:	SP01-S-IEA	Date Analyzed:	08/04/97
Matrix:	Soil	Analysis By:	Van Lare
Moisture Correction Factor:	1.20	Dilution Factor:	80

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
40	Fluorene	330	BQL
41	Hexachlorobenzene	330	BQL
42	Hexachlorobutadiene	330	BQL
43	Hexachlorocyclopentadiene	330	BQL
44	Hexachloroethane	330	BQL
45	Indeno(1,2,3-cd)pyrene	330	BQL
46	Isophorone	330	190000
47	2-Methylnaphthalene	330	33000
48	2-Methylphenol (o-cresol)	330	BQL
49	4-Methylphenol (p-cresol)	330	BQL
50	Naphthalene	330	74000
51	2-Nitroaniline	1600	BQL
52	3-Nitroaniline	1600	BQL
53	4-Nitroaniline	1600	BQL
54	Nitrobenzene	330	BQL
55	2-Nitrophenol	330	BQL
56	4-Nitrophenol	1600	BQL
57	N-Nitroso-di-n-propylamine	330	BQL
58	N-Nitrosodiphenylamine (1)	330	BQL
59	Pentachlorophenol	1600	BQL
60	Phenanthrene	330	BQL
61	Phenol	330	BQL
62	Pyrene	330	BQL
63	1,2,4-Trichlorobenzene	330	BQL
64	2,4,5-Trichlorophenol	330	BQL
65	2,4,6-Trichlorophenol	330	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

(1) Cannot be separated from Diphenylamine

(2) Benzoic acid does not recover consistently below a level of 1600ug/Kg. Sample was diluted due to the high concentration of target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-10	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/18/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/24/97
Sample Identification:	SP02-S-IEA	Date Analyzed:	08/02/97
Matrix:	Soil	Analysis By:	Van Lare
Moisture Correction Factor:	1.23	Dilution Factor:	1.0

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Acenaphthene	330	BQL
2	Acenaphthylene	330	BQL
3	Anthracene	330	BQL
4	Benzoic acid	1600	BQL
5	Benzo(a)anthracene	330	BQL
6	Benzo(b)fluoranthene	330	BQL
7	Benzo(k)fluoranthene	330	BQL
8	Benzo(g,h,i)perylene	330	BQL
9	Benzo(a)pyrene	330	BQL
10	Benzyl alcohol	660	BQL
11	bis(2-Chloroethoxy)methane	330	BQL
12	bis(2-Chloroethyl)ether	330	BQL
13	bis(2-Chloroisopropyl)ether	330	BQL
14	bis(2-Ethylhexyl)phthalate	330	BQL
15	4-Bromophenyl phenyl ether	330	BQL
16	Benzyl butyl phthalate	330	BQL
17	4-Chloroaniline	660	BQL
18	2-Chloronaphthalene	330	BQL
19	4-Chloro-3-methylphenol	660	BQL
20	2-Chlorophenol	330	BQL
21	4-Chlorophenyl phenyl ether	330	BQL
22	Chrysene	330	BQL
23	Dibenzo(a,h)anthracene	330	BQL
24	Dibenzofuran	330	BQL
25	Di-n-butylphthalate	330	BQL
26	1,3-Dichlorobenzene	330	BQL
27	1,4-Dichlorobenzene	330	BQL
28	1,2-Dichlorobenzene	330	BQL
29	3,3'-Dichlorobenzidine	660	BQL
30	2,4-Dichlorophenol	330	BQL
31	Diethyl phthalate	330	BQL
32	2,4-Dimethylphenol	330	BQL
33	Dimethyl phthalate	330	BQL
34	4,6-Dinitro-2-methylphenol	1600	BQL
35	2,4-Dinitrophenol	1600	BQL
36	2,4-Dinitrotoluene	330	BQL
37	2,6-Dinitrotoluene	330	BQL
38	Di-n-octylphthalate	330	BQL
39	Fluoranthene	330	BQL

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-10	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/18/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/24/97
Sample Identification:	SP02-S-IEA	Date Analyzed:	08/02/97
Matrix:	Soil	Analysis By:	Van Lare
Moisture Correction Factor:	1.23	Dilution Factor:	1.0

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
40	Fluorene	330	BQL
41	Hexachlorobenzene	330	BQL
42	Hexachlorobutadiene	330	BQL
43	Hexachlorocyclopentadiene	330	BQL
44	Hexachloroethane	330	BQL
45	Indeno(1,2,3-cd)pyrene	330	BQL
46	Isophorone	330	BQL
47	2-Methylnaphthalene	330	BQL
48	2-Methylphenol (o-cresol)	330	BQL
49	4-Methylphenol (p-cresol)	330	BQL
50	Naphthalene	330	BQL
51	2-Nitroaniline	1600	BQL
52	3-Nitroaniline	1600	BQL
53	4-Nitroaniline	1600	BQL
54	Nitrobenzene	330	BQL
55	2-Nitrophenol	330	BQL
56	4-Nitrophenol	1600	BQL
57	N-Nitroso-di-n-propylamine	330	BQL
58	N-Nitrosodiphenylamine (1)	330	BQL
59	Pentachlorophenol	1600	BQL
60	Phenanthrene	330	BQL
61	Phenol	330	BQL
62	Pyrene	330	BQL
63	1,2,4-Trichlorobenzene	330	BQL
64	2,4,5-Trichlorophenol	330	BQL
65	2,4,6-Trichlorophenol	330	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

(1) Cannot be separated from Diphenylamine

(2) Benzoic acid does not recover consistently below a level of 1600ug/Kg.

Industrial & Environmental Analysts, Inc. (IEA)  
 BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270  
 Laboratory Control Spike (LCS)

IEA Project Number: 2436-001 Date Extracted: 07/24/97  
 IEA Sample Number: 9707403 Date Analyzed: 08/02/97  
 Client Name: Focus Environmental, Inc. Analysis By: Van Lare  
 Client Project I.D.: 119603 ACS Site Matrix: Solid  
 Sample Identification: SLCS898

Number	Compound	Amount	Amount	SLCS	Control	Limits
		Spiked (NG)	Recovered (NG)	% REC	Lower (%REC)	Upper (%REC)
1	Phenol	100	90	90	10	- 112
2	bis(2-Chloroethyl)ether	100	72	72	10	- 200
3	2-Chlorophenol	100	99	99	23	- 134
4	1,3-Dichlorobenzene	100	78	78	58	- 94
5	1,4-Dichlorobenzene	100	80	80	61	- 90
6	1,2-Dichlorobenzene	100	83	83	10	- 141
7	Benzyl alcohol	100	90	90	10	- 153
8	bis(2-Chloroisopropyl)ether	100	74	74	10	- 136
9	2-Methylphenol (o-cresol)	100	89	89	10	- 152
10	N-Nitroso-di-n-propylamine	100	73	73	52	- 93
11	Hexachloroethane	100	86	86	10	- 138
12	4-Methylphenol (p-cresol)	100	91	91	10	- 156
13	Nitrobenzene	100	83	83	10	- 146
14	Isophorone	100	82	82	10	- 142
15	2-Nitrophenol	100	90	90	10	- 160
16	2,4-Dimethylphenol	100	94	94	10	- 167
17	bis(2-Chloroethoxy)methane	100	85	85	10	- 144
18	2,4-Dichlorophenol	100	101	101	10	- 167
19	Benzoic acid	100	96	96	10	- 178
20	1,2,4-Trichlorobenzene	100	88	88	67	- 94
21	Naphthalene	100	83	83	10	- 145
22	4-Chloroaniline	100	47	47	10	- 117
23	Hexachlorobutadiene	100	88	88	10	- 150
24	4-Chloro-3-methylphenol	100	85	85	40	- 145
25	2-Methylnaphthalene	100	84	84	54	- 93
26	Hexachlorocyclopentadiene	100	90	90	10	- 121
27	2,4,6-Trichlorophenol	100	92	92	10	- 159
28	2,4,5-Trichlorophenol	100	94	94	10	- 159
29	2-Chloronaphthalene	100	81	81	10	- 147
30	2-Nitroaniline	100	83	83	10	- 148
31	Dimethyl phthalate	100	84	84	10	- 150
32	Acenaphthylene	100	88	88	10	- 142
33	2,6-Dinitrotoluene	100	86	86	10	- 155
34	3-Nitroaniline	100	71	71	10	- 120
35	Acenaphthene	100	85	85	63	- 92
36	2,4-Dinitrophenol	100	87	87	10	- 133
37	Dibenzofuran	100	81	81	10	- 143
38	4-Nitrophenol	100	87	87	37	- 132
39	2,4-Dinitrotoluene	100	84	84	67	- 95

Industrial & Environmental Analysts, Inc. (IEA)  
 BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270  
 Laboratory Control Spike (LCS)

IEA Project Number: 2436-001 Date Extracted: 07/24/97  
 IEA Sample Number: 9707403 Date Analyzed: 08/02/97  
 Client Name: Focus Environmental, Inc. Analysis By: Van Lare  
 Client Project I.D.: 119603 ACS Site Matrix: Solid  
 Sample Identification: SLCS898

Number	Compound	Amount	Amount	SLCS	Control	Limits
		Spiked (NG)	Recovered (NG)	% REC	Lower (%REC)	Upper (%REC)
40	Diethyl phthalate	100	84	84	10	- 147
41	Fluorene	100	87	87	10	- 144
42	4-Chlorophenyl phenyl ether	100	86	86	10	- 154
43	4-Nitroaniline	100	82	82	10	- 146
44	4,6-Dinitro-2-methylphenol	100	100	100	10	- 160
45	N-Nitrosodiphenylamine	100	95	95	10	- 153
46	4-Bromophenyl phenyl ether	100	95	95	10	- 151
47	Hexachlorobenzene	100	95	95	10	- 148
48	Pentachlorophenol	100	106	106	29	- 152
49	Phenanthrene	100	93	93	10	- 150
50	Anthracene	100	91	91	10	- 152
51	Di-n-butylphthalate	100	89	89	10	- 148
52	Fluoranthene	100	90	90	10	- 147
53	Pyrene	100	92	92	48	- 121
54	Benzyl butyl phthalate	100	87	87	10	- 155
55	Benzo(a)anthracene	100	85	85	10	- 158
56	3,3'-Dichlorobenzidine	100	71	71	10	- 121
57	Chrysene	100	91	91	10	- 150
58	bis(2-Ethylhexyl)phthalate	100	82	82	10	- 149
59	Di-n-octylphthalate	100	83	83	10	- 152
60	Benzo(b)fluoranthene	100	86	86	10	- 148
61	Benzo(k)fluoranthene	100	98	98	10	- 150
62	Benzo(a)pyrene	100	95	95	10	- 151
63	Indeno(1,2,3-cd)pyrene	100	93	93	10	- 158
64	Dibenzo(a,h)anthracene	100	90	90	10	- 151
65	Benzo(g,h,i)perylene	100	96	96	10	- 151

Comments:

Corresponding Samples: 9707403-01 through -10  
 Filename: 0802603

## SOIL SEMIVOLATILE SURROGATE RECOVERY

IEA Project Number: 2436-001

Sample ID	SURR 1	SURR 2	SURR 3	SURR 4	SURR 5	SURR 6
SVB898	83	83	91	96	94	86
LCS898	86	92	90	94	96	88
9707403-01MS	80	72	60	73	53	78
9707403-01MSD	73	75	62	74	45	77
9707403-01	79	71	63	73	45	77
9707403-02	0 D	0 D	0 D	0 D	0 D	0 D
9707403-03	0 D	0 D	0 D	0 D	0 D	0 D
9707403-04	68	64	58	67	43	70
9707403-05	0 D	0 D	0 D	0 D	0 D	0 D
9707403-06	80	70	69	73	54	66
9707403-07	44	45	57	41	23 D	37
9707403-08	0 D	0 D	0 D	0 D	0 D	0 D
9707403-09	0 D	0 D	0 D	0 D	0 D	0 D
9707403-10	73	82	97	80	79	89

D = Surrogate diluted outside of QC recovery limits

## QC Limits

S1 = Nitrobenzene-d5	(23-120)
S2 = 2-Fluorobiphenyl	(30-115)
S3 = Terphenyl-d14	(18-137)
S4 = Phenol - d5	(24-113)
S5 = 2-Fluorophenol	(25-121)
S6 = 2,4,6-Tribromophenol	(19-122)

Industrial & Environmental Analysts, Inc. (IEA)  
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

IEA Project No.: 2436-001  
IEA Reference No.: 9707403-01

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENTRATION (ug/kg)	MS CONCENTRATION (ug/kg)	MS % REC #	QC LIMITS REC
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Phenol	2000	BQL	2500	125 D	26-90
2-Chlorophenol	2000	BQL	1500	75	25-102
1,4-Dichlorobenzene	2000	BQL	1400	70	28-104
N-Nitroso-di-n-prop. (1)	2000	BQL	1700	85	41-126
1,2,4-Trichlorobenzene	2000	BQL	1500	75	38-107
4-Chloro-3-methylphenol	2000	BQL	1600	80	26-103
Acenaphthene	2000	BQL	1500	75	31-137
4-Nitrophenol	2000	BQL	1700	85	11-114
2,4-Dinitrotoluene	2000	BQL	1500	75	28-89
Pentachlorophenol	2000	BQL	1500	75	17-109
Pyrene	2000	BQL	1600	80	35-142

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENTRATION (ug/kg)	MSD % REC #	MSD % RPD #	QC LIMITS RPD	QC LIMITS REC
Phenol	2000	4500	225 D	57 D	35	26-90
2-Chlorophenol	2000	1600	80	6	50	25-102
1,4-Dichlorobenzene	2000	1300	65	7	27	28-104
N-Nitroso-di-n-prop. (1)	2000	1700	85	0	38	41-126
1,2,4-Trichlorobenzene	2000	1500	75	0	23	38-107
4-Chloro-3-methylphenol	2000	1800	90	12	33	26-103
Acenaphthene	2000	1600	80	6	19	31-137
4-Nitrophenol	2000	1900	95	11	50	11-114
2,4-Dinitrotoluene	2000	1800	90 D	18	47	28-89
Pentachlorophenol	2000	1700	85	13	47	17-109
Pyrene	2000	1800	90	12	36	35-142

(1) N-Nitroso-di-n-propylamine

COMMENTS:

BQL = Below Quantitation Limit

D = Spiking compound diluted outside of QC recovery limits

Matrix Spike/Matrix Spike Duplicate were analyzed at twenty-fold dilutions due to the high concentration of target compounds present in the sample.

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403	Date Received:	N/A
Client Name:	Focus Environmental, Inc.	Date Sampled:	N/A
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/31/97
Sample Identification:	QC Blank (SVB910)	Date Analyzed:	08/07/97
Matrix:	Solid	Analysis By:	Van Lare
Moisture Correction Factor:	1.00	Dilution Factor:	1.0

Number	Compound	Quantitation	Results
		Limit (mg/kg)	Concentration (mg/kg)
1	Acenaphthene	99	BQL
2	Acenaphthylene	99	BQL
3	Anthracene	99	BQL
4	Benzoic acid	(2) 480	BQL
5	Benzo(a)anthracene	99	BQL
6	Benzo(b)fluoranthene	99	BQL
7	Benzo(k)fluoranthene	99	BQL
8	Benzo(g,h,i)perylene	99	BQL
9	Benzo(a)pyrene	99	BQL
10	Benzyl alcohol	200	BQL
11	bis(2-Chloroethoxy)methane	99	BQL
12	bis(2-Chloroethyl)ether	99	BQL
13	bis(2-Chloroisopropyl)ether	99	BQL
14	bis(2-Ethylhexyl)phthalate	99	BQL
15	4-Bromophenyl phenyl ether	99	BQL
16	Benzyl butyl phthalate	99	BQL
17	4-Chloroaniline	200	BQL
18	2-Chloronaphthalene	99	BQL
19	4-Chloro-3-methylphenol	200	BQL
20	2-Chlorophenol	99	BQL
21	4-Chlorophenyl phenyl ether	99	BQL
22	Chrysene	99	BQL
23	Dibenzo(a,h)anthracene	99	BQL
24	Dibenzofuran	99	BQL
25	Di-n-butylphthalate	99	BQL
26	1,3-Dichlorobenzene	99	BQL
27	1,4-Dichlorobenzene	99	BQL
28	1,2-Dichlorobenzene	99	BQL
29	3,3'-Dichlorobenzidine	200	BQL
30	2,4-Dichlorophenol	99	BQL
31	Diethyl phthalate	99	BQL
32	2,4-Dimethylphenol	99	BQL
33	Dimethyl phthalate	99	BQL
34	4,6-Dinitro-2-methylphenol	480	BQL
35	2,4-Dinitrophenol	480	BQL
36	2,4-Dinitrotoluene	99	BQL
37	2,6-Dinitrotoluene	99	BQL
38	Di-n-octylphthalate	99	BQL
39	Fluoranthene	99	BQL

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403	Date Received:	N/A
Client Name:	Focus Environmental, Inc.	Date Sampled:	N/A
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/31/97
Sample Identification:	QC Blank (SVB910)	Date Analyzed:	08/07/97
Matrix:	Solid	Analysis By:	Van Lare
Moisture Correction Factor:	1.00	Dilution Factor:	1.0

Number	Compound	Quantitation Limit (mg/kg)	Results Concentration (mg/kg)
40	Fluorene	99	BQL
41	Hexachlorobenzene	99	BQL
42	Hexachlorobutadiene	99	BQL
43	Hexachlorocyclopentadiene	99	BQL
44	Hexachloroethane	99	BQL
45	Indeno(1,2,3-cd)pyrene	99	BQL
46	Isophorone	99	BQL
47	2-Methylnaphthalene	99	BQL
48	2-Methylphenol (o-cresol)	99	BQL
49	4-Methylphenol (p-cresol)	99	BQL
50	Naphthalene	99	BQL
51	2-Nitroaniline	480	BQL
52	3-Nitroaniline	480	BQL
53	4-Nitroaniline	480	BQL
54	Nitrobenzene	99	BQL
55	2-Nitrophenol	99	BQL
56	4-Nitrophenol	480	BQL
57	N-Nitroso-di-n-propylamine	99	BQL
58	N-Nitrosodiphenylamine (1)	99	BQL
59	Pentachlorophenol	480	BQL
60	Phenanthrene	99	BQL
61	Phenol	99	BQL
62	Pyrene	99	BQL
63	1,2,4-Trichlorobenzene	99	BQL
64	2,4,5-Trichlorophenol	99	BQL
65	2,4,6-Trichlorophenol	99	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit N/A = Not Applicable

(1) Cannot be separated from Diphenylamine

(2) Benzoic acid does not recover consistently below a level of 480mg/Kg.

Corresponding Samples: 9707403-11 through -14

Filename: 0807808

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-11	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/17/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/31/97
Sample Identification:	SA04-0-IEA-01	Date Analyzed:	08/11/97
Matrix:	Oil	Analysis By:	Van Lare
Moisture Correction Factor:	1.00	Dilution Factor:	30

Number	Compound	Quantitation Limit (mg/kg)	Results Concentration (mg/kg)
1	Acenaphthene	99	BQL
2	Acenaphthylene	99	BQL
3	Anthracene	99	BQL
4	Benzoic acid	(2) 480	BQL
5	Benzo(a)anthracene	99	BQL
6	Benzo(b)fluoranthene	99	BQL
7	Benzo(k)fluoranthene	99	BQL
8	Benzo(g,h,i)perylene	99	BQL
9	Benzo(a)pyrene	99	BQL
10	Benzyl alcohol	200	BQL
11	bis(2-Chloroethoxy)methane	99	BQL
12	bis(2-Chloroethyl)ether	99	BQL
13	bis(2-Chloroisopropyl)ether	99	BQL
14	bis(2-Ethylhexyl)phthalate	99	BQL
15	4-Bromophenyl phenyl ether	99	BQL
16	Benzyl butyl phthalate	99	BQL
17	4-Chloroaniline	200	BQL
18	2-Chloronaphthalene	99	BQL
19	4-Chloro-3-methylphenol	200	BQL
20	2-Chlorophenol	99	BQL
21	4-Chlorophenyl phenyl ether	99	BQL
22	Chrysene	99	BQL
23	Dibenzo(a,h)anthracene	99	BQL
24	Dibenzofuran	99	BQL
25	Di-n-butylphthalate	99	BQL
26	1,3-Dichlorobenzene	99	BQL
27	1,4-Dichlorobenzene	99	BQL
28	1,2-Dichlorobenzene	99	BQL
29	3,3'-Dichlorobenzidine	200	BQL
30	2,4-Dichlorophenol	99	BQL
31	Diethyl phthalate	99	BQL
32	2,4-Dimethylphenol	99	BQL
33	Dimethyl phthalate	99	BQL
34	4,6-Dinitro-2-methylphenol	480	BQL
35	2,4-Dinitrophenol	480	BQL
36	2,4-Dinitrotoluene	99	BQL
37	2,6-Dinitrotoluene	99	BQL
38	Di-n-octylphthalate	99	BQL
39	Fluoranthene	99	BQL

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-11	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/17/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/31/97
Sample Identification:	SA04-0-IEA-01	Date Analyzed:	08/11/97
Matrix:	Oil	Analysis By:	Van Lare
Moisture Correction Factor:	1.00	Dilution Factor:	30

Number	Compound	Quantitation	Results
		Limit (mg/kg)	Concentration (mg/kg)
40	Fluorene	99	BQL
41	Hexachlorobenzene	99	BQL
42	Hexachlorobutadiene	99	BQL
43	Hexachlorocyclopentadiene	99	BQL
44	Hexachloroethane	99	BQL
45	Indeno(1,2,3-cd)pyrene	99	BQL
46	Isophorone	99	BQL
47	2-Methylnaphthalene	99	18000
48	2-Methylphenol (o-cresol)	99	BQL
49	4-Methylphenol (p-cresol)	99	BQL
50	Naphthalene	99	12000
51	2-Nitroaniline	480	BQL
52	3-Nitroaniline	480	BQL
53	4-Nitroaniline	480	BQL
54	Nitrobenzene	99	BQL
55	2-Nitrophenol	99	BQL
56	4-Nitrophenol	480	BQL
57	N-Nitroso-di-n-propylamine	99	BQL
58	N-Nitrosodiphenylamine (1)	99	BQL
59	Pentachlorophenol	480	BQL
60	Phenanthrene	99	BQL
61	Phenol	99	BQL
62	Pyrene	99	BQL
63	1,2,4-Trichlorobenzene	99	BQL
64	2,4,5-Trichlorophenol	99	BQL
65	2,4,6-Trichlorophenol	99	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

(1) Cannot be separated from Diphenylamine

(2) Benzoic acid does not recover consistently below a level of 480mg/Kg.

Sample was diluted due to the high concentration of target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-12	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/17/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/31/97
Sample Identification:	SA04-0-IEA-02	Date Analyzed:	08/11/97
Matrix:	Oil	Analysis By:	Van Lare
Moisture Correction Factor:	1.00	Dilution Factor:	3.0

Number	Compound	Quantitation Limit (mg/kg)	Results Concentration (mg/kg)
1	Acenaphthene	99	BQL
2	Acenaphthylene	99	BQL
3	Anthracene	99	BQL
4	Benzoic acid	(2) 480	BQL
5	Benzo(a)anthracene	99	BQL
6	Benzo(b)fluoranthene	99	BQL
7	Benzo(k)fluoranthene	99	BQL
8	Benzo(g,h,i)perylene	99	BQL
9	Benzo(a)pyrene	99	BQL
10	Benzyl alcohol	200	BQL
11	bis(2-Chloroethoxy)methane	99	BQL
12	bis(2-Chloroethyl)ether	99	BQL
13	bis(2-Chloroisopropyl)ether	99	BQL
14	bis(2-Ethylhexyl)phthalate	99	BQL
15	4-Bromophenyl phenyl ether	99	BQL
16	Benzyl butyl phthalate	99	BQL
17	4-Chloroaniline	200	BQL
18	2-Chloronaphthalene	99	BQL
19	4-Chloro-3-methylphenol	200	BQL
20	2-Chlorophenol	99	BQL
21	4-Chlorophenyl phenyl ether	99	BQL
22	Chrysene	99	BQL
23	Dibenzo(a,h)anthracene	99	BQL
24	Dibenzofuran	99	BQL
25	Di-n-butylphthalate	99	BQL
26	1,3-Dichlorobenzene	99	BQL
27	1,4-Dichlorobenzene	99	BQL
28	1,2-Dichlorobenzene	99	BQL
29	3,3'-Dichlorobenzidine	200	BQL
30	2,4-Dichlorophenol	99	BQL
31	Diethyl phthalate	99	BQL
32	2,4-Dimethylphenol	99	BQL
33	Dimethyl phthalate	99	420
34	4,6-Dinitro-2-methylphenol	480	BQL
35	2,4-Dinitrophenol	480	BQL
36	2,4-Dinitrotoluene	99	BQL
37	2,6-Dinitrotoluene	99	BQL
38	Di-n-octylphthalate	99	BQL
39	Fluoranthene	99	BQL

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-12	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/17/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/31/97
Sample Identification:	SA04-0-IEA-02	Date Analyzed:	08/11/97
Matrix:	Oil	Analysis By:	Van Lare
Moisture Correction Factor:	1.00	Dilution Factor:	3.0

Number	Compound	Quantitation	Results
		Limit (mg/kg)	Concentration (mg/kg)
40	Fluorene	99	BQL
41	Hexachlorobenzene	99	BQL
42	Hexachlorobutadiene	99	BQL
43	Hexachlorocyclopentadiene	99	BQL
44	Hexachloroethane	99	BQL
45	Indeno(1,2,3-cd)pyrene	99	BQL
46	Isophorone	99	BQL
47	2-Methylnaphthalene	99	BQL
48	2-Methylphenol (o-cresol)	99	BQL
49	4-Methylphenol (p-cresol)	99	BQL
50	Naphthalene	99	BQL
51	2-Nitroaniline	480	BQL
52	3-Nitroaniline	480	BQL
53	4-Nitroaniline	480	BQL
54	Nitrobenzene	99	BQL
55	2-Nitrophenol	99	BQL
56	4-Nitrophenol	480	BQL
57	N-Nitroso-di-n-propylamine	99	BQL
58	N-Nitrosodiphenylamine (1)	99	BQL
59	Pentachlorophenol	480	BQL
60	Phenanthrene	99	BQL
61	Phenol	99	BQL
62	Pyrene	99	BQL
63	1,2,4-Trichlorobenzene	99	BQL
64	2,4,5-Trichlorophenol	99	BQL
65	2,4,6-Trichlorophenol	99	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

(1) Cannot be separated from Diphenylamine

(2) Benzoic acid does not recover consistently below a level of 480mg/Kg.

Sample was diluted due to the high concentration of non-target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-13	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/17/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/31/97
Sample Identification:	SA02-0-IEA-01	Date Analyzed:	08/11/97
Matrix:	Oil	Analysis By:	Van Lare
Moisture Correction Factor:	1.00	Dilution Factor:	5.0

Number	Compound	Quantitation	Results
		Limit (mg/kg)	Concentration (mg/kg)
1	Acenaphthene	99	BQL
2	Acenaphthylene	99	BQL
3	Anthracene	99	BQL
4	Benzoic acid	480	BQL
5	Benzo(a)anthracene	99	BQL
6	Benzo(b)fluoranthene	99	BQL
7	Benzo(k)fluoranthene	99	BQL
8	Benzo(g,h,i)perylene	99	BQL
9	Benzo(a)pyrene	99	BQL
10	Benzyl alcohol	200	BQL
11	bis(2-Chloroethoxy)methane	99	BQL
12	bis(2-Chloroethyl)ether	99	BQL
13	bis(2-Chloroisopropyl)ether	99	BQL
14	bis(2-Ethylhexyl)phthalate	99	BQL
15	4-Bromophenyl phenyl ether	99	BQL
16	Benzyl butyl phthalate	99	BQL
17	4-Chloroaniline	200	BQL
18	2-Chloronaphthalene	99	BQL
19	4-Chloro-3-methylphenol	200	BQL
20	2-Chlorophenol	99	BQL
21	4-Chlorophenyl phenyl ether	99	BQL
22	Chrysene	99	BQL
23	Dibenzo(a,h)anthracene	99	BQL
24	Dibenzofuran	99	BQL
25	Di-n-butylphthalate	99	BQL
26	1,3-Dichlorobenzene	99	BQL
27	1,4-Dichlorobenzene	99	BQL
28	1,2-Dichlorobenzene	99	BQL
29	3,3'-Dichlorobenzidine	200	BQL
30	2,4-Dichlorophenol	99	BQL
31	Diethyl phthalate	99	BQL
32	2,4-Dimethylphenol	99	BQL
33	Dimethyl phthalate	99	BQL
34	4,6-Dinitro-2-methylphenol	480	BQL
35	2,4-Dinitrophenol	480	BQL
36	2,4-Dinitrotoluene	99	BQL
37	2,6-Dinitrotoluene	99	BQL
38	Di-n-octylphthalate	99	BQL
39	Fluoranthene	99	BQL

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-13	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/17/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/31/97
Sample Identification:	SA02-0-IEA-01	Date Analyzed:	08/11/97
Matrix:	Oil	Analysis By:	Van Lare
Moisture Correction Factor:	1.00	Dilution Factor:	5.0

Number	Compound	Quantitation Limit (mg/kg)	Results Concentration (mg/kg)
40	Fluorene	99	BQL
41	Hexachlorobenzene	99	BQL
42	Hexachlorobutadiene	99	BQL
43	Hexachlorocyclopentadiene	99	BQL
44	Hexachloroethane	99	BQL
45	Indeno(1,2,3-cd)pyrene	99	BQL
46	Isophorone	99	BQL
47	2-Methylnaphthalene	99	BQL
48	2-Methylphenol (o-cresol)	99	BQL
49	4-Methylphenol (p-cresol)	99	BQL
50	Naphthalene	99	BQL
51	2-Nitroaniline	480	BQL
52	3-Nitroaniline	480	BQL
53	4-Nitroaniline	480	BQL
54	Nitrobenzene	99	BQL
55	2-Nitrophenol	99	BQL
56	4-Nitrophenol	480	BQL
57	N-Nitroso-di-n-propylamine	99	BQL
58	N-Nitrosodiphenylamine (1)	99	BQL
59	Pentachlorophenol	480	BQL
60	Phenanthrene	99	BQL
61	Phenol	99	BQL
62	Pyrene	99	BQL
63	1,2,4-Trichlorobenzene	99	BQL
64	2,4,5-Trichlorophenol	99	BQL
65	2,4,6-Trichlorophenol	99	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

(1) Cannot be separated from Diphenylamine

(2) Benzoic acid does not recover consistently below a level of 480mg/Kg. Sample was diluted due to the high concentration of non-target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number: 2436-001  
 IEA Sample Number: 9707403-14 Date Received: 07/21/97  
 Client Name: Focus Environmental, Inc. Date Sampled: 07/17/97  
 Client Project I.D.: 119603 ACS Site Date Extracted: 07/31/97  
 Sample Identification: SA02-0-IEA-02 Date Analyzed: 08/08/97  
 Matrix: Oil Analysis By: Van Lare  
 Moisture Correction Factor: 1.00 Dilution Factor: 10

Number	Compound	Quantitation Limit (mg/kg)	Results Concentration (mg/kg)
1	Acenaphthene	99	BQL
2	Acenaphthylene	99	BQL
3	Anthracene	99	BQL
4	Benzoic acid	(2) 480	BQL
5	Benzo(a)anthracene	99	BQL
6	Benzo(b)fluoranthene	99	BQL
7	Benzo(k)fluoranthene	99	BQL
8	Benzo(g,h,i)perylene	99	BQL
9	Benzo(a)pyrene	99	BQL
10	Benzyl alcohol	200	BQL
11	bis(2-Chloroethoxy)methane	99	BQL
12	bis(2-Chloroethyl)ether	99	BQL
13	bis(2-Chloroisopropyl)ether	99	BQL
14	bis(2-Ethylhexyl)phthalate	99	7200
15	4-Bromophenyl phenyl ether	99	BQL
16	Benzyl butyl phthalate	99	BQL
17	4-Chloroaniline	200	BQL
18	2-Chloronaphthalene	99	BQL
19	4-Chloro-3-methylphenol	200	BQL
20	2-Chlorophenol	99	BQL
21	4-Chlorophenyl phenyl ether	99	BQL
22	Chrysene	99	BQL
23	Dibenzo(a,h)anthracene	99	BQL
24	Dibenzofuran	99	BQL
25	Di-n-butylphthalate	99	2400
26	1,3-Dichlorobenzene	99	BQL
27	1,4-Dichlorobenzene	99	BQL
28	1,2-Dichlorobenzene	99	BQL
29	3,3'-Dichlorobenzidine	200	BQL
30	2,4-Dichlorophenol	99	BQL
31	Diethyl phthalate	99	BQL
32	2,4-Dimethylphenol	99	BQL
33	Dimethyl phthalate	99	1100
34	4,6-Dinitro-2-methylphenol	480	BQL
35	2,4-Dinitrophenol	480	BQL
36	2,4-Dinitrotoluene	99	BQL
37	2,6-Dinitrotoluene	99	BQL
38	Di-n-octylphthalate	99	BQL
39	Fluoranthene	99	BQL

Industrial & Environmental Analysts, Inc. (IEA)  
BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number:	2436-001		
IEA Sample Number:	9707403-14	Date Received:	07/21/97
Client Name:	Focus Environmental, Inc.	Date Sampled:	07/17/97
Client Project I.D.:	119603 ACS Site	Date Extracted:	07/31/97
Sample Identification:	SA02-0-IEA-02	Date Analyzed:	08/08/97
Matrix:	Oil	Analysis By:	Van Lare
Moisture Correction Factor:	1.00	Dilution Factor:	10

Number	Compound	Quantitation Limit (mg/kg)	Results Concentration (mg/kg)
40	Fluorene	99	BQL
41	Hexachlorobenzene	99	BQL
42	Hexachlorobutadiene	99	BQL
43	Hexachlorocyclopentadiene	99	BQL
44	Hexachloroethane	99	BQL
45	Indeno(1,2,3-cd)pyrene	99	BQL
46	Isophorone	99	4900
47	2-Methylnaphthalene	99	1700
48	2-Methylphenol (o-cresol)	99	BQL
49	4-Methylphenol (p-cresol)	99	BQL
50	Naphthalene	99	3400
51	2-Nitroaniline	480	BQL
52	3-Nitroaniline	480	BQL
53	4-Nitroaniline	480	BQL
54	Nitrobenzene	99	BQL
55	2-Nitrophenol	99	BQL
56	4-Nitrophenol	480	BQL
57	N-Nitroso-di-n-propylamine	99	BQL
58	N-Nitrosodiphenylamine (1)	99	BQL
59	Pentachlorophenol	480	BQL
60	Phenanthrene	99	BQL
61	Phenol	99	BQL
62	Pyrene	99	BQL
63	1,2,4-Trichlorobenzene	99	BQL
64	2,4,5-Trichlorophenol	99	BQL
65	2,4,6-Trichlorophenol	99	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

(1) Cannot be separated from Diphenylamine

(2) Benzoic acid does not recover consistently below a level of 480mg/Kg.

Sample was diluted due to the high concentration of target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
 BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270  
 Laboratory Control Spike (LCS)

IEA Project Number: 2436-001 Date Extracted: 07/31/97  
 IEA Sample Number: 9707403 Date Analyzed: 08/08/97  
 Client Name: Focus Environmental, Inc. Analysis By: Van Lare  
 Client Project I.D.: 119603 ACS Site Matrix: Solid  
 Sample Identification: SLCS910

Number	Compound	Amount Spiked (NG)	Amount Recovered (NG)	SLCS % REC	Control Lower (%REC)	Control Upper (%REC)	Limits
1	Phenol	20	22	110	10	-	112
2	bis(2-Chloroethyl)ether	20	22	110	10	-	200
3	2-Chlorophenol	20	21	105	23	-	134
4	1,3-Dichlorobenzene	20	19	95 *	58	-	94
5	1,4-Dichlorobenzene	20	19	95 *	61	-	90
6	1,2-Dichlorobenzene	20	19	95	10	-	141
7	Benzyl alcohol	20	19	95	10	-	153
8	bis(2-Chloroisopropyl)ether	20	18	90	10	-	136
9	2-Methylphenol (o-cresol)	20	20	100	10	-	152
10	N-Nitroso-di-n-propylamine	20	17	85	52	-	93
11	Hexachloroethane	20	19	95	10	-	138
12	4-Methylphenol (p-cresol)	20	20	100	10	-	156
13	Nitrobenzene	20	18	90	10	-	146
14	Isophorone	20	19	95	10	-	142
15	2-Nitrophenol	20	19	95	10	-	160
16	2,4-Dimethylphenol	20	21	105	10	-	167
17	bis(2-Chloroethoxy)methane	20	19	95	10	-	144
18	2,4-Dichlorophenol	20	21	105	10	-	167
19	Benzoic acid	20	20	100	10	-	178
20	1,2,4-Trichlorobenzene	20	20	100 *	67	-	94
21	Naphthalene	20	19	95	10	-	145
22	4-Chloroaniline	20	14	70	10	-	117
23	Hexachlorobutadiene	20	19	95	10	-	150
24	4-Chloro-3-methylphenol	20	20	100	40	-	145
25	2-Methylnaphthalene	20	19	95 *	54	-	93
26	Hexachlorocyclopentadiene	20	11	55	10	-	121
27	2,4,6-Trichlorophenol	20	21	105	10	-	159
28	2,4,5-Trichlorophenol	20	22	110	10	-	159
29	2-Chloronaphthalene	20	19	95	10	-	147
30	2-Nitroaniline	20	19	95	10	-	148
31	Dimethyl phthalate	20	19	95	10	-	150
32	Acenaphthylene	20	20	100	10	-	142
33	2,6-Dinitrotoluene	20	20	100	10	-	155
34	3-Nitroaniline	20	19	95	10	-	120
35	Acenaphthene	20	19	95 *	63	-	92
36	2,4-Dinitrophenol	20	20	100	10	-	133
37	Dibenzofuran	20	19	95	10	-	143
38	4-Nitrophenol	20	21	105	37	-	132
39	2,4-Dinitrotoluene	20	19	95	67	-	95

Industrial & Environmental Analysts, Inc. (IEA)  
 BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270  
 Laboratory Control Spike (LCS)

IEA Project Number: 2436-001 Date Extracted: 07/31/97  
 IEA Sample Number: 9707403 Date Analyzed: 08/08/97  
 Client Name: Focus Environmental, Inc. Analysis By: Van Lare  
 Client Project I.D.: 119603 ACS Site Matrix: Solid  
 Sample Identification: SLCS910

Number	Compound	Amount Spiked (NG)	Amount Recovered (NG)	SLCS % REC	Control Lower (%REC)	Limits Upper (%REC)
40	Diethyl phthalate	20	19	95	10	- 147
41	Fluorene	20	19	95	10	- 144
42	4-Chlorophenyl phenyl ether	20	19	95	10	- 154
43	4-Nitroaniline	20	19	95	10	- 146
44	4,6-Dinitro-2-methylphenol	20	19	95	10	- 160
45	N-Nitrosodiphenylamine	20	19	95	10	- 153
46	4-Bromophenyl phenyl ether	20	18	90	10	- 151
47	Hexachlorobenzene	20	18	90	10	- 148
48	Pentachlorophenol	20	22	110	29	- 152
49	Phenanthrene	20	19	95	10	- 150
50	Anthracene	20	20	100	10	- 152
51	Di-n-butylphthalate	20	19	95	10	- 148
52	Fluoranthene	20	19	95	10	- 147
53	Pyrene	20	19	95	48	- 121
54	Benzyl butyl phthalate	20	19	95	10	- 155
55	Benzo(a)anthracene	20	20	100	10	- 158
56	3,3'-Dichlorobenzidine	20	18	90	10	- 121
57	Chrysene	20	20	100	10	- 150
58	bis(2-Ethylhexyl)phthalate	20	20	100	10	- 149
59	Di-n-octylphthalate	20	20	100	10	- 152
60	Benzo(b)fluoranthene	20	21	105	10	- 148
61	Benzo(k)fluoranthene	20	19	95	10	- 150
62	Benzo(a)pyrene	20	20	100	10	- 151
63	Indeno(1,2,3-cd)pyrene	20	19	95	10	- 158
64	Dibenzo(a,h)anthracene	20	19	95	10	- 151
65	Benzo(g,h,i)perylene	20	20	100	10	- 151

Comments:

\* Outside of QC recovery limits  
 Corresponding Samples: 9707403-11 through -14  
 Filename: 0808806

SOIL SEMIVOLATILE SURROGATE RECOVERY

IEA Project Number: 2436-001

Sample ID	SURR 1	SURR 2	SURR 3	SURR 4	SURR 5	SURR 6
SVB910	103	100	98	107	113	117
LCS910	96	99	97	110	117	104
9707403-11MS	106	98	96	97	87	86
9707403-11MSD	114	98	98	98	86	95
9707403-11	116	104	105	101	93	86
9707403-12	116	120 D	118	124 D	126 D	128 D
9707403-13	98	101	95	112	111	109
9707403-14	109	92	95	95	96	90

D = Surrogate diluted outside of QC recovery limits

QC Limits

S1 = Nitrobenzene-d5	(23-120)
S2 = 2-Fluorobiphenyl	(30-115)
S3 = Terphenyl-d14	(18-137)
S4 = Phenol - d5	(24-113)
S5 = 2-Fluorophenol	(25-121)
S6 = 2,4,6-Tribromophenol	(19-122)

Industrial & Environmental Analysts, Inc. (IEA)  
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

IEA Project No.: 2436-001  
IEA Reference No.: 9707403-11

COMPOUND	SPIKE ADDED (mg/kg)	SAMPLE CONCENTRATION (mg/kg)	MS CONCENTRATION (mg/kg)	MS % REC #	QC LIMITS REC
Phenol	120	BQL	0	0 D	26-90
2-Chlorophenol	120	BQL	0	0 D	25-102
1,4-Dichlorobenzene	120	BQL	0	0 D	28-104
N-Nitroso-di-n-prop.(1)	120	BQL	0	0 D	41-126
1,2,4-Trichlorobenzene	120	BQL	0	0 D	38-107
4-Chloro-3-methylphenol	120	BQL	0	0 D	26-103
Acenaphthene	120	BQL	0	0 D	31-137
4-Nitrophenol	120	BQL	0	0 D	11-114
2,4-Dinitrotoluene	120	BQL	0	0 D	28-89
Pentachlorophenol	120	BQL	0	0 D	17-109
Pyrene	120	BQL	0	0 D	35-142

	SPIKE ADDED (mg/kg)	MSD CONCENTRATION (mg/kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC
Phenol	120	0	0 D	0	35	26-90
2-Chlorophenol	120	0	0 D	0	50	25-102
1,4-Dichlorobenzene	120	0	0 D	0	27	28-104
N-Nitroso-di-n-prop.(1)	120	0	0 D	0	38	41-126
1,2,4-Trichlorobenzene	120	0	0 D	0	23	38-107
4-Chloro-3-methylphenol	120	0	0 D	0	33	26-103
Acenaphthene	120	0	0 D	0	19	31-137
4-Nitrophenol	120	0	0 D	0	50	11-114
2,4-Dinitrotoluene	120	0	0 D	0	47	28-89
Pentachlorophenol	120	0	0 D	0	47	17-109
Pyrene	120	0	0 D	0	36	35-142

(1) N-Nitroso-di-n-propylamine

COMMENTS:

D = Spiking compound diluted outside of QC recovery limits

BQL = Below Quantitation Limit

Matrix Spike/Matrix Spike Duplicate were analyzed at thirty-fold dilutions due to the high concentration of target compounds present in the sample.

Industrial & Environmental Analysts, Inc. (IEA)  
 TCLP REGULATED  
 BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number: 2436-001  
 IEA Sample Number: 9707403 Date Received: N/A  
 Client Name: Focus Environmental, Inc. Date Sampled: N/A  
 Client Project I.D.: 119603 ACS Site Date Extracted: 08/07/97  
 Sample Identification: QC Blank (SVB925) Date Analyzed: 08/12/97  
 Matrix: Water Analysis By: Van Lare  
 TCLP Extraction Date: N/A Dilution Factor: 1.0

Number	Compound	EPA	Quantitation Limit (mg/L)	Results Concentration (mg/L)
		Regulatory Level (mg/L)		
1	1,4-Dichlorobenzene	7.5	0.020	BQL
2	2,4-Dinitrotoluene	0.13	0.020	BQL
3	Hexachlorobutadiene	0.5	0.020	BQL
4	Hexachloroethane	3.0	0.020	BQL
5	Total Cresol	200	0.020	BQL
6	Nitrobenzene	2.0	0.020	BQL
7	Pentachlorophenol	100	0.10	BQL
8	Pyridine	5.0	0.020	BQL
9	2,4,5-Trichlorophenol	400	0.020	BQL
10	2,4,6-Trichlorophenol	2.0	0.020	BQL
11	Hexachlorobenzene	0.13	0.020	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

N/A = Not Applicable

Corresponding Samples: TCLP918, 9707403-15 through -18, -17SPK

Filename: 0812603

Industrial & Environmental Analysts, Inc. (IEA)  
 TCLP REGULATED  
 BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number: 2436-001  
 IEA Sample Number: 9707403 Date Received: N/A  
 Client Name: Focus Environmental, Inc. Date Sampled: N/A  
 Client Project I.D.: 119603 ACS Site Date Extracted: 08/07/97  
 Sample Identification: Method Blank (TCLP918) Date Analyzed: 08/13/97  
 Matrix: Leachate Analysis By: Van Lare  
 TCLP Extraction Date: 08/05/97 Dilution Factor: 1.0

Number	Compound	EPA	Quantitation	Results
		Regulatory Level (mg/L)	Limit (mg/L)	Concentration (mg/L)
1	1,4-Dichlorobenzene	7.5	0.020	BQL
2	2,4-Dinitrotoluene	0.13	0.020	BQL
3	Hexachlorobutadiene	0.5	0.020	BQL
4	Hexachloroethane	3.0	0.020	BQL
5	Total Cresol	200	0.020	BQL
6	Nitrobenzene	2.0	0.020	BQL
7	Pentachlorophenol	100	0.10	BQL
8	Pyridine	5.0	0.020	BQL
9	2,4,5-Trichlorophenol	400	0.020	BQL
10	2,4,6-Trichlorophenol	2.0	0.020	BQL
11	Hexachlorobenzene	0.13	0.020	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

N/A = Not Applicable

Corresponding Samples: 9707403-15 through -18

Filename: 0813603

Industrial & Environmental Analysts, Inc. (IEA)  
 TCLP REGULATED  
 BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number: 2436-001  
 IEA Sample Number: 9707403-15 Date Received: 07/21/97  
 Client Name: Focus Environmental, Inc. Date Sampled: 07/17/97  
 Client Project I.D.: 119603 ACS Site Date Extracted: 08/07/97  
 Sample Identification: SA04-0-IEA-01 Date Analyzed: 08/13/97  
 Matrix: Leachate Analysis By: Van Lare  
 TCLP Extraction Date: 08/05/97 Dilution Factor: 100

Number	Compound	EPA	Quantitation	Results
		Regulatory Level (mg/L)	Limit (mg/L)	Concentration (mg/L)
1	1,4-Dichlorobenzene	7.5	0.020	BQL
2	2,4-Dinitrotoluene	0.13	0.020	BQL
3	Hexachlorobutadiene	0.5	0.020	BQL
4	Hexachloroethane	3.0	0.020	BQL
5	Total Cresol	200	0.020	BQL
6	Nitrobenzene	2.0	0.020	BQL
7	Pentachlorophenol	100	0.10	BQL
8	Pyridine	5.0	0.020	BQL
9	2,4,5-Trichlorophenol	400	0.020	BQL
10	2,4,6-Trichlorophenol	2.0	0.020	BQL
11	Hexachlorobenzene	0.13	0.020	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

Sample was diluted due to the high concentration of non-target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
 TCLP REGULATED  
 BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number: 2436-001  
 IEA Sample Number: 9707403-16 Date Received: 07/21/97  
 Client Name: Focus Environmental, Inc. Date Sampled: 07/17/97  
 Client Project I.D.: 119603 ACS Site Date Extracted: 08/07/97  
 Sample Identification: SA04-0-IEA-02 Date Analyzed: 08/13/97  
 Matrix: Leachate Analysis By: Van Lare  
 TCLP Extraction Date: 08/05/97 Dilution Factor: 50

Number	Compound	EPA	Quantitation	Results
		Regulatory Level (mg/L)	Limit (mg/L)	Concentration (mg/L)
1	1,4-Dichlorobenzene	7.5	0.020	BQL
2	2,4-Dinitrotoluene	0.13	0.020	BQL
3	Hexachlorobutadiene	0.5	0.020	BQL
4	Hexachloroethane	3.0	0.020	BQL
5	Total Cresol	200	0.020	BQL
6	Nitrobenzene	2.0	0.020	BQL
7	Pentachlorophenol	100	0.10	BQL
8	Pyridine	5.0	0.020	BQL
9	2,4,5-Trichlorophenol	400	0.020	BQL
10	2,4,6-Trichlorophenol	2.0	0.020	BQL
11	Hexachlorobenzene	0.13	0.020	BQL

**Comments:**

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

Sample was diluted due to the high concentration of non-target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
 TCLP REGULATED  
 BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number: 2436-001  
 IEA Sample Number: 9707403-17 Date Received: 07/21/97  
 Client Name: Focus Environmental, Inc. Date Sampled: 07/17/97  
 Client Project I.D.: 119603 ACS Site Date Extracted: 08/07/97  
 Sample Identification: SA02-0-IEA-01 Date Analyzed: 08/13/97  
 Matrix: Leachate Analysis By: Van Lare  
 TCLP Extraction Date: 08/05/97 Dilution Factor: 100

Number	Compound	EPA	Quantitation	Results
		Regulatory Level (mg/L)	Limit (mg/L)	Concentration (mg/L)
1	1,4-Dichlorobenzene	7.5	0.020	BQL
2	2,4-Dinitrotoluene	0.13	0.020	BQL
3	Hexachlorobutadiene	0.5	0.020	BQL
4	Hexachloroethane	3.0	0.020	BQL
5	Total Cresol	200	0.020	BQL
6	Nitrobenzene	2.0	0.020	BQL
7	Pentachlorophenol	100	0.10	BQL
8	Pyridine	5.0	0.020	BQL
9	2,4,5-Trichlorophenol	400	0.020	BQL
10	2,4,6-Trichlorophenol	2.0	0.020	BQL
11	Hexachlorobenzene	0.13	0.020	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

Sample was diluted due the high concentration of non-target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
 TCLP REGULATED  
 BASE/NEUTRAL/ACID EXTRACTABLES SW-846 METHOD 8270

IEA Project Number: 2436-001  
 IEA Sample Number: 9707403-18 Date Received: 07/21/97  
 Client Name: Focus Environmental, Inc. Date Sampled: 07/17/97  
 Client Project I.D.: 119603 ACS Site Date Extracted: 08/07/97  
 Sample Identification: SA02-0-IEA-02 Date Analyzed: 08/13/97  
 Matrix: Leachate Analysis By: Van Lare  
 TCLP Extraction Date: 08/05/97 Dilution Factor: 100

Number	Compound	EPA	Quantitation	Results
		Regulatory Level (mg/L)	Limit (mg/L)	Concentration (mg/L)
1	1,4-Dichlorobenzene	7.5	0.020	BQL
2	2,4-Dinitrotoluene	0.13	0.020	BQL
3	Hexachlorobutadiene	0.5	0.020	BQL
4	Hexachloroethane	3.0	0.020	BQL
5	Total Cresol	200	0.020	BQL
6	Nitrobenzene	2.0	0.020	BQL
7	Pentachlorophenol	100	0.10	BQL
8	Pyridine	5.0	0.020	BQL
9	2,4,5-Trichlorophenol	400	0.020	BQL
10	2,4,6-Trichlorophenol	2.0	0.020	BQL
11	Hexachlorobenzene	0.13	0.020	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

Sample was diluted due to the high concentration of non-target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)  
TCLP SEMIVOLATILE MATRIX SPIKE

IEA Project No.: 2436-001  
 IEA Sample ID: 9707403-17  
 Date Extracted: 08/07/97  
 Date Analyzed: 08/13/97

COMPOUND	QUANTITATION LIMIT (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS % REC #
Pyridine	0.020	BQL	O D
1,4-Dichlorobenzene	0.020	BQL	O D
Total Cresol	0.020	BQL	O D
Hexachloroethane	0.020	BQL	O D
Nitrobenzene	0.020	BQL	O D
Hexachlorobutadiene	0.020	BQL	O D
2,4,6-Trichlorophenol	0.020	BQL	O D
2,4,5-Trichlorophenol	0.020	BQL	O D
2,4-Dinitrotoluene	0.020	BQL	O D
Hexachlorobenzene	0.020	BQL	O D
Pentachlorophenol	0.10	BQL	O D

Comments:

BQL = Below Quantitation Limit

D = Spiking compound diluted outside of QC recovery limits

Matrix Spike was analyzed at a one-hundred fold dilution due to the high concentration of non-target compounds present in the sample.

Industrial & Environmental Analysts, Inc. (IEA)  
WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

IEA Project No.: 2436-001  
IEA Reference No.: DI925

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC
Phenol	50	BQL	45	90 *	12-89
2-Chlorophenol	50	BQL	44	88	27-123
1,4-Dichlorobenzene	50	BQL	43	86	36-97
N-Nitroso-di-n-prop.(1)	50	BQL	42	84	41-116
1,2,4-Trichlorobenzene	50	BQL	49	98	39-98
4-Chloro-3-methylphenol	50	BQL	46	92	23-97
Acenaphthene	50	BQL	48	96	46-118
4-Nitrophenol	50	BQL	44	88 *	10-80
2,4-Dinitrotoluene	50	BQL	50	100 *	24-96
Pentachlorophenol	50	BQL	46	92	9-103
Pyrene	50	BQL	49	98	26-127

	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC
Phenol	50	45	90 *	0	42	12-89
2-Chlorophenol	50	44	88	0	40	27-123
1,4-Dichlorobenzene	50	43	86	0	28	36-97
N-Nitroso-di-n-prop.(1)	50	42	84	0	38	41-116
1,2,4-Trichlorobenzene	50	49	98	0	28	39-98
4-Chloro-3-methylphenol	50	46	92	0	42	23-97
Acenaphthene	50	49	98	2	31	46-118
4-Nitrophenol	50	43	86 *	2	50	10-80
2,4-Dinitrotoluene	50	50	100 *	0	38	24-96
Pentachlorophenol	50	44	88	4	50	9-103
Pyrene	50	49	98	0	31	26-127

(1) N-Nitroso-di-n-propylamine

COMMENTS:

BQL = Below Quantitation Limit

\* Outside of QC recovery limits

Industrial & Environmental Analysts, Inc. (IEA)  
WATER SEMIVOLATILE SURROGATE RECOVERIES

IEA Project No.: 2436-001

Sample ID	SURR 1	SURR 2	SURR 3	SURR 4	SURR 5	SURR 6
SVB925	93	101	125	87	90	115
TCLP918	81	87	130	53	74	100
DI925MS	86	93	92	88	82	89
DI925MSD	88	94	93	90	82	87
9707403-17SPK	O D	O D	O D	O D	O D	O D
9707403-15	O D	O D	O D	O D	O D	O D
9707403-16	O D	O D	O D	O D	O D	O D
9707403-17	O D	O D	O D	O D	O D	O D
9707403-18	O D	O D	O D	O D	O D	O D

D = Surrogate diluted outside of QC recovery limits

QC Limits

S1 = Nitrobenzene-d5	(35-114)
S2 = 2-Fluorobiphenyl	(43-116)
S3 = Terphenyl-d14	(33-141)
S4 = Phenol-d5	(10-110)
S5 = 2-Fluorophenol	(21-100)
S6 = 2,4,6-Tribromophenol	(10-123)

Industrial & Environmental Analysts, Inc. (IEA)  
 PESTICIDES / PCBs SW-846 METHOD 8081

IEA Project Number:	2436-001	Date Received:	N/A
IEA Sample Number:	9707403	Date Sampled:	N/A
Client Name:	Focus Environmental, Inc	Date Extracted:	07/24/97
Client Project ID:	119603 ACS Site	Date Analyzed:	08/02/97
Sample Identification:	QC Blank (PB532)	Analysis By:	Briggs
Matrix:	Soil	Dilution Factor:	1.0
Moisture Correction Factor:	1.00		

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	alpha-BHC	8.0	BQL
2	beta-BHC	8.0	BQL
3	delta-BHC	8.0	BQL
4	gamma-BHC (Lindane)	8.0	BQL
5	Heptachlor	8.0	BQL
6	Aldrin	8.0	BQL
7	Heptachlor epoxide	8.0	BQL
8	Endosulfan I	8.0	BQL
9	Dieldrin	16	BQL
10	4,4'-DDE	16	BQL
11	Endrin	16	BQL
12	Endosulfan II	16	BQL
13	4,4'-DDD	16	BQL
14	Endosulfan sulfate	16	BQL
15	4,4'-DDT	16	BQL
16	Methoxychlor	80	BQL
17	Toxaphene	160	BQL
18	Aroclor 1016	80	BQL
19	Aroclor 1221	80	BQL
20	Aroclor 1232	80	BQL
21	Aroclor 1242	80	BQL
22	Aroclor 1248	80	BQL
23	Aroclor 1254	160	BQL
24	Aroclor 1260	160	BQL
25	Chlordane (technical)	80	BQL
26	Endrin aldehyde	16	BQL

Additional Compounds:

27	Endrin ketone	16	BQL
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Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

N/A = Not Applicable

Corresponding Samples: 9707403-01 through -10

FORM 8080S Rev. 030293

## Industrial &amp; Environmental Analysts, Inc. (IEA)

SOIL PESTICIDE  
LABORATORY CONTROL SAMPLE (LCS)

IEA Project No.: 2436-001  
 IEA Sample No.: 9707403  
 IEA QC Sample No.: LCS532

Date Analyzed: 08/02/97  
 Dilution Factor: 1.0

Compound	SPIKE ADDED (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	%Recovery Limits
alpha-BHC	13	13	100	43-105
gamma-BHC	13	14	108	52-108
Heptachlor	13	13	100	52-111
Aldrin	13	16	123 *	42-122
beta-BHC	13	14	108	63-125
delta-BHC	13	12	92	19-140
Heptachlor epoxide	13	12	92	54-121
Endosulfan I	13	14	108	66-138
4,4'-DDE	13	11	85	61-143
Dieldrin	13	13	100	57-146
Endrin	67	66	99	55-126
4,4'-DDD	67	66	99	53-127
Endosulfan II	67	110	164 *	47-121
4,4'-DDT	67	70	104	25-160
Endrin aldehyde	67	55	82	10-200
~hoxychlor	130	130	100	63-133
osulfan sulfate	67	58	87	26-144
Endrin ketone	67	64	96	10-200

## Comments:

\* = Outside method limits

Corresponding Samples: 9707403-01 through -10

**SOIL PESTICIDE**  
**MATRIX SPIKE / MATRIX SPIKE DUPLICATE**

IEA Project No.: 2436-001

Date Analyzed: 08/02/97

IEA Sample No.: 9707403

Dilution Factor: 1.0

IEA QC Sample No.: 9707404-14MS

Compound	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	%Recovery Limits
alpha-BHC	19	BQL	81	426 *	37-134
gamma-BHC	19	BQL	19	100	32-127
Heptachlor	19	BQL	15	79	34-111
Aldrin	19	BQL	18	95	42-122
beta-BHC	19	BQL	17	89	17-147
delta-BHC	19	BQL	16	84	19-140
Heptachlor epoxide	19	BQL	21	111	37-142
Endosulfan I	19	BQL	62	326 *	45-153
4,4'-DDE	19	90	407	1668 *	30-145
Dieldrin	19	BQL	21	111	36-146
Endrin	96	BQL	82	85	30-147
4,4'-DDD	96	46	280	244 *	31-141
Endosulfan II	96	BQL	150	156	10-200
4,4'-DDT	96	BQL	110	115	25-160
Endrin aldehyde	96	BQL	66	69	10-200
heoxychlor	192	BQL	150	78	25-160
Endosulfan sulfate	96	BQL	68	71	26-144
Endrin ketone	48	BQL	74	154	10-200

## Comments:

BQL = Below Quantitation Limit

Corresponding Samples: 9707403-01 through -10

\* = Outside method limits

SOIL PESTICIDE  
MATRIX SPIKE / MATRIX SPIKE DUPLICATE

IEA Project No.: 2436-001  
 IEA Sample No.: 9707403  
 IEA QC Sample No.: 9707404-14MSD

Date Analyzed: 08/02/97  
 Dilution Factor: 1.0

Compound	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	%RPD	%Recovery Limits
alpha-BHC	19	BQL	13	68	145	* 37-134
gamma-BHC	19	BQL	17	89	11	32-127
Heptachlor	19	BQL	13	68	14	34-111
Aldrin	19	BQL	15	79	18	42-122
beta-BHC	19	BQL	16	84	6	17-147
delta-BHC	19	BQL	15	79	6	19-140
Heptachlor epoxide	19	BQL	18	95	15	37-142
Endosulfan I	19	BQL	36	189 *	53	* 45-153
4,4'-DDE	19	90	240	789 *	52	* 30-145
Dieldrin	19	BQL	16	84	27	* 36-146
Endrin	96	BQL	77	80	6	30-147
4,4'-DDD	96	46	180	140	43	* 31-141
Endosulfan II	96	BQL	130	135	14	10-200
4,4'-DDT	96	BQL	89	93	21	25-160
Endrin aldehyde	96	BQL	54	56	20	10-200
Methoxychlor	192	BQL	140	73	7	25-160
Endosulfan sulfate	96	BQL	66	69	3	26-144
Endrin ketone	48	BQL	70	146	6	10-200

Comments:

BQL = Below Quantitation Limit

Corresponding Samples: 9707403-01 through -10

\* = Outside method limits

Industrial & Environmental Analysts, Inc. (IEA)  
 PESTICIDES / PCBs SW-846 METHOD 8081

IEA Project Number:	2436-001	Date Received:	07/21/97
IEA Sample Number:	9707403-01	Date Sampled:	07/17/97
Client Name:	Focus Environmental, Inc	Date Extracted:	07/24/97
Client Project ID:	119603 ACS Site	Date Analyzed:	08/02/97
Sample Identification:	D02-S-IEA	Analysis By:	Briggs
Matrix:	Soil	Dilution Factor:	50
Moisture Correction Factor:	1.22		

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	alpha-BHC	8.0	BQL
2	beta-BHC	8.0	BQL
3	delta-BHC	8.0	BQL
4	gamma-BHC (Lindane)	8.0	BQL
5	Heptachlor	8.0	BQL
6	Aldrin	8.0	BQL
7	Heptachlor epoxide	8.0	BQL
8	Endosulfan I	8.0	BQL
9	Dieldrin	16	BQL
10	4,4'-DDE	16	BQL
11	Endrin	16	BQL
12	Endosulfan II	16	BQL
13	4,4'-DDD	16	BQL
14	Endosulfan sulfate	16	BQL
15	4,4'-DDT	16	BQL
16	Methoxychlor	80	BQL
17	Toxaphene	160	BQL
18	Aroclor 1016	80	BQL
19	Aroclor 1221	80	BQL
20	Aroclor 1232	80	BQL
21	Aroclor 1242	80	BQL
22	Aroclor 1248	80	BQL
23	Aroclor 1254	160	BQL
24	Aroclor 1260	160	20000
25	Chlordane (technical)	80	BQL
26	Endrin aldehyde	16	BQL

Additional Compounds:

27	Endrin ketone	16	BQL
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Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)  
 PESTICIDES / PCBs SW-846 METHOD 8081

IEA Project Number:	2436-001	Date Received:	07/21/97
IEA Sample Number:	9707403-02	Date Sampled:	07/17/97
Client Name:	Focus Environmental, Inc	Date Extracted:	07/24/97
Client Project ID:	119603 ACS Site	Date Analyzed:	08/02/97
Sample Identification:	SA04-S-IEA	Analysis By:	Briggs
Matrix:	Soil	Dilution Factor:	200
Moisture Correction Factor:	1.23		

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	alpha-BHC	8.0	BQL
2	beta-BHC	8.0	BQL
3	delta-BHC	8.0	BQL
4	gamma-BHC (Lindane)	8.0	BQL
5	Heptachlor	8.0	BQL
6	Aldrin	8.0	BQL
7	Heptachlor epoxide	8.0	BQL
8	Endosulfan I	8.0	BQL
9	Dieldrin	16	BQL
10	4,4'-DDE	16	BQL
11	Endrin	16	BQL
12	Endosulfan II	16	BQL
13	4,4'-DDD	16	BQL
14	Endosulfan sulfate	16	BQL
15	4,4'-DDT	16	BQL
16	Methoxychlor	80	BQL
17	Toxaphene	160	BQL
18	Aroclor 1016	80	BQL
19	Aroclor 1221	80	BQL
20	Aroclor 1232	80	BQL
21	Aroclor 1242	80	BQL
22	Aroclor 1248	80	330000
23	Aroclor 1254	160	BQL
24	Aroclor 1260	160	BQL
25	Chlordane (technical)	80	BQL
26	Endrin aldehyde	16	BQL

Additional Compounds:

27	Endrin ketone	16	BQL
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Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)  
PESTICIDES / PCBs SW-846 METHOD 8081

IEA Project Number:	2436-001	Date Received:	07/21/97
IEA Sample Number:	9707403-03	Date Sampled:	07/17/97
Client Name:	Focus Environmental, Inc	Date Extracted:	07/24/97
Client Project ID:	119603 ACS Site	Date Analyzed:	08/02/97
Sample Identification:	D01-S-IEA	Analysis By:	Briggs
Matrix:	Soil	Dilution Factor:	130
Moisture Correction Factor:	1.16		

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	alpha-BHC	8.0	BQL
2	beta-BHC	8.0	BQL
3	delta-BHC	8.0	BQL
4	gamma-BHC (Lindane)	8.0	BQL
5	Heptachlor	8.0	BQL
6	Aldrin	8.0	BQL
7	Heptachlor epoxide	8.0	BQL
8	Endosulfan I	8.0	BQL
9	Dieldrin	16	BQL
10	4,4'-DDE	16	BQL
11	Endrin	16	BQL
12	Endosulfan II	16	BQL
13	4,4'-DDD	16	BQL
14	Endosulfan sulfate	16	BQL
15	4,4'-DDT	16	BQL
16	Methoxychlor	80	BQL
17	Toxaphene	160	BQL
18	Aroclor 1016	80	BQL
19	Aroclor 1221	80	BQL
20	Aroclor 1232	80	BQL
21	Aroclor 1242	80	BQL
22	Aroclor 1248	80	BQL
23	Aroclor 1254	160	BQL
24	Aroclor 1260	160	28000
25	Chlordane (technical)	80	BQL
26	Endrin aldehyde	16	BQL

Additional Compounds:

27	Endrin ketone	16	BQL
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Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)  
 PESTICIDES / PCBs SW-846 METHOD 8081

IEA Project Number:	2436-001	Date Received:	07/21/97
IEA Sample Number:	9707403-04	Date Sampled:	07/17/97
Client Name:	Focus Environmental, Inc	Date Extracted:	07/24/97
Client Project ID:	119603 ACS Site	Date Analyzed:	08/02/97
Sample Identification:	KP01-S-IEA	Analysis By:	Briggs
Matrix:	Soil	Dilution Factor:	100
Moisture Correction Factor:	1.24		

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	alpha-BHC	8.0	BQL
2	beta-BHC	8.0	BQL
3	delta-BHC	8.0	BQL
4	gamma-BHC (Lindane)	8.0	BQL
5	Heptachlor	8.0	BQL
6	Aldrin	8.0	BQL
7	Heptachlor epoxide	8.0	BQL
8	Endosulfan I	8.0	BQL
9	Dieldrin	16	BQL
10	4,4'-DDE	16	BQL
11	Endrin	16	BQL
12	Endosulfan II	16	BQL
13	4,4'-DDD	16	BQL
14	Endosulfan sulfate	16	BQL
15	4,4'-DDT	16	BQL
16	Methoxychlor	80	BQL
17	Toxaphene	160	BQL
18	Aroclor 1016	80	BQL
19	Aroclor 1221	80	BQL
20	Aroclor 1232	80	BQL
21	Aroclor 1242	80	BQL
22	Aroclor 1248	80	127000
23	Aroclor 1254	160	BQL
24	Aroclor 1260	160	BQL
25	Chlordane (technical)	80	BQL
26	Endrin aldehyde	16	BQL

Additional Compounds:

27	Endrin ketone	16	BQL
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Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)  
 PESTICIDES / PCBs SW-846 METHOD 8081

IEA Project Number:	2436-001	Date Received:	07/21/97
IEA Sample Number:	9707403-05	Date Sampled:	07/17/97
Client Name:	Focus Environmental, Inc	Date Extracted:	07/24/97
Client Project ID:	119603 ACS Site	Date Analyzed:	08/02/97
Sample Identification:	SA02-S-IEA	Analysis By:	Briggs
Matrix:	Soil	Dilution Factor:	200
Moisture Correction Factor:	1.36		

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	alpha-BHC	8.0	BQL
2	beta-BHC	8.0	BQL
3	delta-BHC	8.0	BQL
4	gamma-BHC (Lindane)	8.0	BQL
5	Heptachlor	8.0	BQL
6	Aldrin	8.0	BQL
7	Heptachlor epoxide	8.0	BQL
8	Endosulfan I	8.0	BQL
9	Dieldrin	16	BQL
10	4,4'-DDE	16	BQL
11	Endrin	16	BQL
12	Endosulfan II	16	BQL
13	4,4'-DDD	16	BQL
14	Endosulfan sulfate	16	BQL
15	4,4'-DDT	16	BQL
16	Methoxychlor	80	BQL
17	Toxaphene	160	BQL
18	Aroclor 1016	80	BQL
19	Aroclor 1221	80	BQL
20	Aroclor 1232	80	BQL
21	Aroclor 1242	80	BQL
22	Aroclor 1248	80	63000
23	Aroclor 1254	160	BQL
24	Aroclor 1260	160	62000
25	Chlordane (technical)	80	BQL
26	Endrin aldehyde	16	BQL

Additional Compounds:

27	Endrin ketone	16	BQL
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Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)  
 DOCUMENTS / DOCS - SW-04C METHOD 0001

IEA Project Number: 2436-001 Date Received: 07/21/97  
 IEA Sample Number: 9707403-06 Date Sampled: 07/18/97  
 Client Name: Focus Environmental, Inc Date Extracted: 07/24/97  
 Client Project ID: 119603 ACS Site Date Analyzed: 08/02/97  
 Sample Identification: T12-S-IEA Analysis By: Briggs  
 Matrix: Soil Dilution Factor: 50  
 Moisture Correction Factor: 1.09

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	alpha-BHC	8.0	BQL
2	beta-BHC	8.0	BQL
3	delta-BHC	8.0	BQL
4	gamma-BHC (Lindane)	8.0	BQL
5	Heptachlor	8.0	BQL
6	Aldrin	8.0	BQL
7	Heptachlor epoxide	8.0	BQL
8	Endosulfan I	8.0	BQL
9	Dieldrin	16	BQL
10	4,4'-DDE	16	BQL
11	Endrin	16	BQL
12	Endosulfan II	16	BQL
13	4,4'-DDD	16	BQL
14	Endosulfan sulfate	16	BQL
15	4,4'-DDT	16	BQL
16	Methoxychlor	80	BQL
17	Toxaphene	160	BQL
18	Aroclor 1016	80	BQL
19	Aroclor 1221	80	BQL
20	Aroclor 1232	80	BQL
21	Aroclor 1242	80	BQL
22	Aroclor 1248	80	BQL
23	Aroclor 1254	160	4700
24	Aroclor 1260	160	BQL
25	Chlordane (technical)	80	BQL
26	Endrin aldehyde	16	BQL

Additional Compounds:

27	Endrin ketone	16	BQL
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Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)  
PESTICIDES / PCBs SW-846 METHOD 8081

IEA Project Number:	2436-001	Date Received:	07/21/97
IEA Sample Number:	9707403-07	Date Sampled:	07/18/97
Client Name:	Focus Environmental, Inc	Date Extracted:	07/24/97
Client Project ID:	119603 ACS Site	Date Analyzed:	08/02/97
Sample Identification:	SA01-S-IEA-02	Analysis By:	Briggs
Matrix:	Soil	Dilution Factor:	50
Moisture Correction Factor: 1.07			

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	alpha-BHC	8.0	BQL
2	beta-BHC	8.0	BQL
3	delta-BHC	8.0	BQL
4	gamma-BHC (Lindane)	8.0	BQL
5	Heptachlor	8.0	BQL
6	Aldrin	8.0	BQL
7	Heptachlor epoxide	8.0	BQL
8	Endosulfan I	8.0	BQL
9	Dieldrin	16	BQL
10	4,4'-DDE	16	BQL
11	Endrin	16	BQL
12	Endosulfan II	16	BQL
13	4,4'-DDD	16	BQL
14	Endosulfan sulfate	16	BQL
15	4,4'-DDT	16	BQL
16	Methoxychlor	80	BQL
17	Toxaphene	160	BQL
18	Aroclor 1016	80	BQL
19	Aroclor 1221	80	BQL
20	Aroclor 1232	80	BQL
21	Aroclor 1242	80	BQL
22	Aroclor 1248	80	
23	Aroclor 1254	160	BQL
24	Aroclor 1260	160	BQL
25	Chlordane (technical)	80	BQL
26	Endrin aldehyde	16	BQL
			9400

Additional Compounds:

27	Endrin ketone	16	BQL
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Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)  
 PESTICIDES / PCBs SW-846 METHOD 8081

IEA Project Number:	2436-001	Date Received:	07/21/97
IEA Sample Number:	9707403-08	Date Sampled:	07/18/97
Client Name:	Focus Environmental, Inc	Date Extracted:	07/24/97
Client Project ID:	119603 ACS Site	Date Analyzed:	08/14/97
Sample Identification:	SA01-S-IEA-01	Analysis By:	Briggs
Matrix:	Soil	Dilution Factor:	45
Moisture Correction Factor:	1.22		

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	alpha-BHC	8.0	BQL
2	beta-BHC	8.0	BQL
3	delta-BHC	8.0	BQL
4	gamma-BHC (Lindane)	8.0	BQL
5	Heptachlor	8.0	BQL
6	Aldrin	8.0	BQL
7	Heptachlor epoxide	8.0	BQL
8	Endosulfan I	8.0	BQL
9	Dieldrin	16	BQL
10	4,4'-DDE	16	BQL
11	Endrin	16	BQL
12	Endosulfan II	16	BQL
13	4,4'-DDD	16	BQL
14	Endosulfan sulfate	16	BQL
15	4,4'-DDT	16	BQL
16	Methoxychlor	80	BQL
17	Toxaphene	160	BQL
18	Aroclor 1016	80	BQL
19	Aroclor 1221	80	BQL
20	Aroclor 1232	80	BQL
21	Aroclor 1242	80	BQL
22	Aroclor 1248	80	14000
23	Aroclor 1254	160	BQL
24	Aroclor 1260	160	BQL
25	Chlordane (technical)	80	BQL
26	Endrin aldehyde	16	BQL

Additional Compounds:

27	Endrin ketone	16	BQL
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Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)  
PESTICIDES / PCBs SW-846 METHOD 8081

IEA Project Number:	2436-001	Date Received:	07/21/97
IEA Sample Number:	9707403-09	Date Sampled:	07/18/97
Client Name:	Focus Environmental, Inc	Date Extracted:	07/24/97
Client Project ID:	119603 ACS Site	Date Analyzed:	08/02/97
Sample Identification:	SP01-S-IEA	Analysis By:	Briggs
Matrix:	Soil	Dilution Factor:	100
Moisture Correction Factor:	1.21		

Number	Compound	Quantitation	Results
		Limit (ug/kg)	Concentration (ug/kg)
1	alpha-BHC	8.0	BQL
2	beta-BHC	8.0	BQL
3	delta-BHC	8.0	BQL
4	gamma-BHC (Lindane)	8.0	BQL
5	Heptachlor	8.0	BQL
6	Aldrin	8.0	BQL
7	Heptachlor epoxide	8.0	BQL
8	Endosulfan I	8.0	BQL
9	Dieldrin	16	BQL
10	4,4'-DDE	16	BQL
11	Endrin	16	BQL
12	Endosulfan II	16	BQL
13	4,4'-DDD	16	BQL
14	Endosulfan sulfate	16	BQL
15	4,4'-DDT	16	BQL
16	Methoxychlor	80	BQL
17	Toxaphene	160	BQL
18	Aroclor 1016	80	BQL
19	Aroclor 1221	80	BQL
20	Aroclor 1232	80	BQL
21	Aroclor 1242	80	BQL
22	Aroclor 1248	80	39000
23	Aroclor 1254	160	BQL
24	Aroclor 1260	160	29000
25	Chlordane (technical)	80	BQL
26	Endrin aldehyde	16	BQL

Additional Compounds:

27	Endrin ketone	16	BQL
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Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)  
 PESTICIDES / PCBs SW-846 METHOD 8081

IEA Project Number:	2436-001	Date Received:	07/21/97
IEA Sample Number:	9707403-10	Date Sampled:	07/18/97
Client Name:	Focus Environmental, Inc	Date Extracted:	07/24/97
Client Project ID:	119603 ACS Site	Date Analyzed:	08/02/97
Sample Identification:	SP02-S-IEA	Analysis By:	Briggs
Matrix:	Soil	Dilution Factor:	220
Moisture Correction Factor:	1.24		

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	alpha-BHC	8.0	BQL
2	beta-BHC	8.0	BQL
3	delta-BHC	8.0	BQL
4	gamma-BHC (Lindane)	8.0	BQL
5	Heptachlor	8.0	BQL
6	Aldrin	8.0	BQL
7	Heptachlor epoxide	8.0	BQL
8	Endosulfan I	8.0	BQL
9	Dieldrin	16	BQL
10	4,4'-DDE	16	BQL
11	Endrin	16	BQL
12	Endosulfan II	16	BQL
13	4,4'-DDD	16	BQL
14	Endosulfan sulfate	16	BQL
15	4,4'-DDT	16	BQL
16	Methoxychlor	80	BQL
17	Toxaphene	160	BQL
18	Aroclor 1016	80	BQL
19	Aroclor 1221	80	BQL
20	Aroclor 1232	80	BQL
21	Aroclor 1242	80	BQL
22	Aroclor 1248	80	37000
23	Aroclor 1254	160	BQL
24	Aroclor 1260	160	36000
25	Chlordane (technical)	80	BQL
26	Endrin aldehyde	16	BQL

Additional Compounds:

27	Endrin ketone	16	BQL
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Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)

PESTICIDE SURROGATE PERCENT RECOVERIES

PROJ. ID: 2436-001

Sample ID	%Recovery	
	TCX	DCB
PB532	60	55 *
LCS532	64	57 *
9707404-14MS	66	102
9707414-14MSD	61	79
9707403-01	0 DL	0 DL
9707403-02	0 DL	0 DL
9707403-03	0 DL	0 DL
9707403-04	0 DL	0 DL
9707403-05	0 DL	0 DL
9707403-06	0 DL	0 DL
9707403-07	0 DL	0 DL
9707403-08	0 DL	0 DL
9707403-09	0 DL	0 DL
9707403-10	0 DL	0 DL

Comments:

\* = Outside method limits

DL = Diluted Out

Industrial & Environmental Analysts, Inc. (IEA)  
PCB IN OIL

IEA Project Number:	2436-001	Date Received:	N/A
IEA Sample Number:	9707403	Date Sampled:	N/A
Client Name:	Focus Environmental, Inc	Date Extracted:	07/31/97
Client Project ID:	119603 ACS Site	Date Analyzed:	08/01/97
Sample Identification:	QC Blank (PB542)	Analysis By:	Briggs
Matrix:	Oil	Dilution Factor:	1.0

Number	Compound	Quantitation Limit (mg/kg)	Results Concentration (mg/kg)
1	Aroclor 1016	1.0	BQL
2	Aroclor 1221	1.0	BQL
3	Aroclor 1232	1.0	BQL
4	Aroclor 1242	1.0	BQL
5	Aroclor 1248	1.0	BQL
6	Aroclor 1254	1.0	BQL
7	Aroclor 1260	1.0	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

N/A = Not Applicable

Corresponding Samples: 9707403-11 through -14

Industrial & Environmental Analysts, Inc. (IEA)  
PCB IN OIL

IEA Project Number: 2436-001 Date Received: 07/21/97  
IEA Sample Number: 9707403-11 Date Sampled: 07/17/97  
Client Name: Focus Environmental, Inc Date Extracted: 07/31/97  
Client Project ID: 119603 ACS Site Date Analyzed: 08/05/97  
Sample Identification: SA04-0-IEA-01 Analysis By: Briggs  
Matrix: Oil Dilution Factor: 20

Number	Compound	Quantitation	Results
		Limit (mg/kg)	Concentration (mg/kg)
1	Aroclor 1016	1.0	BQL
2	Aroclor 1221	1.0	BQL
3	Aroclor 1232	1.0	BQL
4	Aroclor 1242	1.0	BQL
5	Aroclor 1248	1.0	BQL
6	Aroclor 1254	1.0	BQL
7	Aroclor 1260	1.0	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)  
PCB IN OIL

IEA Project Number:	2436-001	Date Received:	07/21/97
IEA Sample Number:	9707403-12	Date Sampled:	07/17/97
Client Name:	Focus Environmental, Inc	Date Extracted:	07/31/97
Client Project ID:	119603 ACS Site	Date Analyzed:	08/01/97
Sample Identification:	SA04-0-IEA-02	Analysis By:	Briggs
Matrix:	Oil	Dilution Factor:	1.0

Number	Compound	Quantitation Limit (mg/kg)	Results Concentration (mg/kg)
1	Aroclor 1016	1.0	BQL
2	Aroclor 1221	1.0	BQL
3	Aroclor 1232	1.0	BQL
4	Aroclor 1242	1.0	BQL
5	Aroclor 1248	1.0	BQL
6	Aroclor 1254	1.0	BQL
7	Aroclor 1260	1.0	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)  
PCB IN OIL

IEA Project Number:	2436-001	Date Received:	07/21/97
IEA Sample Number:	9707403-13	Date Sampled:	07/17/97
Client Name:	Focus Environmental, Inc	Date Extracted:	07/31/97
Client Project ID:	119603 ACS Site	Date Analyzed:	08/01/97
Sample Identification:	SA02-0-IEA-01	Analysis By:	Briggs
Matrix:	Oil	Dilution Factor:	1.0

Number	Compound	Quantitation	Results
		Limit (mg/kg)	Concentration (mg/kg)
1	Aroclor 1016	1.0	BQL
2	Aroclor 1221	1.0	BQL
3	Aroclor 1232	1.0	BQL
4	Aroclor 1242	1.0	BQL
5	Aroclor 1248	1.0	BQL
6	Aroclor 1254	1.0	BQL
7	Aroclor 1260	1.0	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)  
PCB IN OIL

IEA Project Number: 2436-001 Date Received: 07/21/97  
IEA Sample Number: 9707403-14 Date Sampled: 07/17/97  
Client Name: Focus Environmental, Inc Date Extracted: 07/31/97  
Client Project ID: 119603 ACS Site Date Analyzed: 08/01/97  
Sample Identification: SA02-0-IEA-02 Analysis By: Briggs  
Matrix: Oil Dilution Factor: 50

Number	Compound	Quantitation Limit (mg/kg)	Results Concentration (mg/kg)
1	Aroclor 1016	1.0	BQL
2	Aroclor 1221	1.0	BQL
3	Aroclor 1232	1.0	BQL
4	Aroclor 1242	1.0	BQL
5	Aroclor 1248	1.0	BQL
6	Aroclor 1254	1.0	BQL
7	Aroclor 1260	1.0	650

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)  
 GC PCB SW-846 METHOD 8080  
 Laboratory Control Spike (LCS)

IEA Project Number:	2436-001	Date Received:	N/A
IEA Sample Number:	9707403	Date Sampled:	N/A
Client Name:	Focus Environmental, Inc	Date Extracted:	07/31/97
Client Project I.D.:	119603 ACS Site	Date Analyzed:	08/01/97
Sample Identification:	LCS542	Analysis By:	Briggs
Associated QC Blank:	PB542	Dilution Factor:	1.0
QC Batch ID#:	542	Matrix:	Oil
		Time of Analysis:	0607

Number	Compound	Amount	Amount	Control Limits			
		Spiked (MG/KG)	Recovered (MG/KG)	LCS %REC	Lower %REC	Upper %REC	
1	AR1260	14	16	114	8	-	127

Surrogate Compounds	Acceptance Criteria	% Recovery
Tetrachloro-m-xylene	60 - 150	100
Decachlorobiphenyl	60 - 150	107

Comments:  
 Corresponding Samples: 9707403-11 through -14

Industrial & Environmental Analysts, Inc. (IEA)  
 OIL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY  
 GC PCB SW-846 METHOD 8080

IEA Project No:	2436-001	Date Received:	07/21/97
IEA Sample No:	9707403	Date Sampled:	07/17/97
Client Name:	Focus Environmental, Inc	Date Extracted:	07/31/97
Sample ID:	119603 ACS Site	MS Date Analyzed:	08/01/97
Associated QC Blank:	PB542	MSD Date Analyzed:	08/01/97
QC Batch ID:	542	MS Time Analyzed:	0641
IEA MS Sample No:	BLANKMS	MSD Time Analyzed:	0715
IEA MSD Sample No:	BLANKMSD	Dilution Factor:	1.0

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS %	QC LIMITS REC
				REC #	
AR1260	14	BQL	16	114	8-127

COMPOUND	SPIKE ADDED	MSD CONCENTRATION (mg/Kg)	MSD %	MSD % REC#	QC LIMIT REC
				RPD	
AR1260	14	16	114	0	8-1

Corresponding Sample: 9707403-11 through -14  
 MCF = Moisture Correction Factor

Industrial & Environmental Analysts, Inc. (IEA)

PCB SURROGATE PERCENT RECOVERIES

PROJ. ID: 2436-001

Sample ID	%Recovery	
	TCX	DCB
PB542	96	72
LCS542	100	107
BLANKMS	100	107
BLANKMSD	100	107
9707403-11	0 DL	0 DL
9707403-12	111	102
9707403-13	104	60
9707403-14	0 DL	0 DL

ADVISORY  
Recovery Limits

TCX = Tetrachloro-m-xylene      60 - 150  
DCB = Decachlorobiphenyl      60 - 150

Comments:

DL = Diluted Out

Industrial & Environmental Analysts, Inc. (IEA)

IEA Project #: 2436-001  
IEA Sample #: 9707403 Matrix: Oil  
Client Name: Focus Environmental, Inc Date Received: N/A  
Client Proj. I.D.: 119603 ACS Site Date Sampled: N/A  
Sample I.D.: QC Blank

Parameter	Method	Quantitation		Date Prepared	Date Analyzed	Analyst
		Limits	Results			
T-Cyanide	EPA 335.2 M	1.0 mg/kg	BQL	N/A	07/31/97	KCW
Ignitability	SW-846 1010	70 Deg F	BQL	N/A	07/29/97	SJ
Paint Filter Test	SW-846 9095	N/A	BQL	N/A	07/30/97	ALHM

Comments:

Corresponding Samples: 9707403-11, 12, 13, 14

Industrial & Environmental Analysts, Inc. (IEA)

IEA Project #: 2436-001  
IEA Sample #: 9707403-11 Matrix: Oil  
Client Name: Focus Environmental, Inc Date Received: 07/21/97  
Client Proj. I.D.: 119603 ACS Site Date Sampled: 07/17/97  
Sample I.D.: SA04-0-IEA-01

Parameter	Method	Quantitation		Prepared	Date	Date
		Limits	Results		Analyzed	Analyst
T-Cyanide	EPA 335.2 M	1.0 mg/kg	BQL	N/A	07/31/97	KCW
Ignitability	SW-846 1010	74.6 Deg F	BQL	N/A	07/29/97	SJ
Paint Filter Test	SW-846 9095	N/A	Pos	N/A	07/30/97	ALHM

Comments:

Industrial & Environmental Analysts, Inc. (IEA)

IEA Project #: 2436-001  
IEA Sample #: 9707403-12 Matrix: Oil  
Client Name: Focus Environmental, Inc Date Received: 07/21/97  
Client Proj. I.D.: 119603 ACS Site Date Sampled: 07/17/97  
Sample I.D.: SA04-0-IEA-02

Parameter	Method	Quantitation		Prepared	Date	Date
		Limits	Results		Analyzed	Analyst
T-Cyanide	EPA 335.2 M	1.0 mg/kg	BQL	N/A	07/31/97	KCW
Ignitability	SW-846 1010	72.6 Deg F	BQL	N/A	07/29/97	SJ
Paint Filter Test	SW-846 9095	N/A	Pos	N/A	07/30/97	ALHM

Comments:

Industrial & Environmental Analysts, Inc. (IEA)

IEA Project #: 2436-001  
IEA Sample #: 9707403-13 Matrix: Oil  
Client Name: Focus Environmental, Inc Date Received: 07/21/97  
Client Proj. I.D.: 119603 ACS Site Date Sampled: 07/17/97  
Sample I.D.: SA02-0-IEA-01

Parameter	Method	Quantitation		Date Prepared	Date Analyzed	Date Analyst
		Limits	Results			
T-Cyanide	EPA 335.2 M	1.0 mg/kg	BQL	N/A	07/31/97	KCW
Ignitability	SW-846 1010	73.6 Deg F	BQL	N/A	07/29/97	SJ
Paint Filter Test	SW-846 9095	N/A	Pos	N/A	07/30/97	ALHM

Comments:

Industrial & Environmental Analysts, Inc. (IEA)

IEA Project #: 2436-001  
IEA Sample #: 9707403-14 Matrix: Oil  
Client Name: Focus Environmental, Inc Date Received: 07/21/97  
Client Proj. I.D.: 119603 ACS Site Date Sampled: 07/17/97  
Sample I.D.: SA02-0-IEA-02

Parameter	Method	Quantitation		Date Prepared	Date Analyzed	Analyst
		Limits	Results			
T-Cyanide	EPA 335.2 M	1.0 mg/kg	2.37	N/A	07/31/97	KCW
Ignitability	SW-846 1010	71.6 Deg F	BQL	N/A	07/29/97	SJ
Paint Filter Test	SW-846 9095	N/A	Pos	N/A	07/30/97	ALHM

Comments:

Industrial & Environmental Analysts, Inc. (IEA)

INORGANIC QC SUMMARY  
DUPLICATE ANALYSIS

IEA Project No.: 2436-001

IEA Sample No.: 9707403

Matrix: Oil

IEA Reference No.	Test Parameter	Method	DUPLICATE RESULTS			Date Analyzed
			Sample (mg/L)	Duplicate (mg/L)	RPD (%)	
9707403-11	T-Cyanide	EPA 335.2 M	BQL	BQL	0	07/31/97
9707403-11	Ignitability	SW-846 1010	BQL	BQL	0	07/29/97
9707536-01	Paint Filter Test	SW-846 9095	Neg	Neg	0	07/30/97

$$\text{RPD} = \frac{\text{S-D}}{\text{(S+D)/2}} \times 100 \quad \text{Control Limits: +/- 20\%}$$

Comments:

Corresponding Samples: 9707403-11, 12, 13, 14

Industrial & Environmental Analysts, Inc. (IEA)

INORGANIC QC SUMMARY  
SPIKE RESULTS

IEA Project No.: 2436-001

IEA Sample No.: 9707403

Matrix: Oil

IEA Reference No.	Test Parameter	Method	SPIKE RESULTS (mg/L)				Analysis Date
			SA	SR	SSR	%R	
9707403-11	T-Cyanide	EPA 335.2 M	4.0	BQL	4.28	107	07/31/97

$$\%R = [(SSR - SR) / (SA)] * 100$$

Control Limits: 75 - 125%

Comments:

Corresponding Samples: 9707403-11, 12, 13, 14

7/31

Dept : 02  
 W. Order # : 9707403  
 Project # : 2436\_001

Cat	Test	Fraction	Results	Units	Book/Page
à	CN_04	11-D	<1.00	mg/kg	CV35-87 Kew 7-31-97
à		12-D		mg/kg	
à		13-D		mg/kg	
à		14-D	2.37	mg/kg	
à	IGN_021	11-D	≤ 74.4	Degrees F	55 7-29-97
à		12-D	≤ 72.6	Degrees F	
à		13-D	≤ 73.6	Degrees F	
à		14-D	≤ 71.6	Degrees F	
à	PFT_02	11-D	Pos	neg/pos	7/30/97 CV8D-162 7-30-97 a/hm
à		12-D		neg/pos	
à		13-D		neg/pos	
a		14-D		neg/pos	
àDS	CNP_02	11-D	No Results		
à		12-D	No Results		
à		13-D	No Results		
à		14-D	No Results		

Industrial & Environmental Analysts, Inc. (IEA)

**INORGANIC QC SUMMARY  
DUPLICATE ANALYSIS**

IEA Project No.: \_\_\_\_\_  
IEA Sample No.: \_\_\_\_\_  
Matrix: \_\_\_\_\_

$$RPD = \frac{S-D}{(S+D)/2} \times 100$$

Control Limits: +/- 20%

### **Comments:**

#### **Corresponding Samples:**



IEA

**INORGANIC QC SUMMARY  
SPIKE RESULTS**

Object No.: \_\_\_\_\_  
 EA Sample No.: \_\_\_\_\_  
Matrix: \_\_\_\_\_

$$R = (SSR - SR) / (SA) * 100$$

### Comments:

### Corresponding Samples:

Industrial & Environmental Analysts, Inc. (IEA)  
Level 2 Metals Results Report

IEA Project #: 2436\_001

IEA Sample #: 970740301

Matrix: SOIL

Client Name: Focus Environmental, Inc.

Date Received: 07/21/97

Client Proj. I.D.: 119603 ACS Site

Date Sampled: 07/17/97

Sample I.D.: D02-S-IEA

Parameter	Method	Quant Limit	Result (mg/kg)	Date Prepared	Date Analyzed	IEA Analyst	Prep Run	Prep Batch
ALUMINUM	SW846 6010	23.5	3930	07/24/97	07/26/97	RH	R12056	07249704P
ANTIMONY	SW846 6010	7.04	BQL	07/24/97	07/26/97	RH	R12056	07249704P
ARSENIC	SW846 6010	1.17	7.78	07/24/97	07/26/97	RH	R12056	07249704P
BARIUM	SW846 6010	23.5	222	07/24/97	07/26/97	RH	R12056	07249704P
BERYLLIUM	SW846 6010	0.587	BQL	07/24/97	07/26/97	RH	R12056	07249704P
CADMIUM	SW846 6010	0.587	8.04	07/24/97	07/26/97	RH	R12056	07249704P
CALCIUM	SW846 6010	587	8910	07/24/97	07/26/97	RH	R12056	07249704P
CHROMIUM	SW846 6010	1.17	111	07/24/97	07/26/97	RH	R12056	07249704P
COBALT	SW846 6010	5.87	BQL	07/24/97	07/26/97	RH	R12056	07249704P
COPPER	SW846 6010	2.93	269	07/24/97	07/26/97	RH	R12056	07249704P
IRON	SW846 6010	11.7	8730	07/24/97	07/26/97	RH	R12056	07249704P
LEAD	SW846 6010	0.352	603	07/24/97	07/26/97	RH	R12056	07249704P
MAGNESIUM	SW846 6010	587	3800	07/24/97	07/26/97	RH	R12056	07249704P
MANGANESE	SW846 6010	1.76	130	07/24/97	07/26/97	RH	R12056	07249704P
MERCURY	SW846 7471	0.117	0.836	07/29/97	07/30/97	PW	R12112	07299701H
CKEL	SW846 6010	4.70	15.1	07/24/97	07/26/97	RH	R12056	07249704P
TASSIUM	SW846 6010	587	BQL	07/24/97	07/26/97	RH	R12056	07249704P
SELENIUM	SW846 6010	0.587	0.636	07/24/97	07/26/97	RH	R12056	07249704P
SILVER	SW846 6010	1.17	BQL	07/24/97	07/26/97	RH	R12056	07249704P
SODIUM	SW846 6010	587	BQL	07/24/97	07/26/97	RH	R12056	07249704P
THALLIUM	SW846 6010	1.17	BQL	07/24/97	07/26/97	RH	R12056	07249704P
VANADIUM	SW846 6010	5.87	7.32	07/24/97	07/26/97	RH	R12056	07249704P
ZINC	SW846 6010	2.35	339	07/24/97	07/26/97	RH	R12056	07249704P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
Level 2 Metals Results Report

IEA Project #: 2436\_001

IEA Sample #: 970740302

Matrix: SOIL

Client Name: Focus Environmental, Inc.

Date Received: 07/21/97

Client Proj. I.D.: 119603 ACS Site

Date Sampled: 07/17/97

Sample I.D.: SA04-S-IEA

Parameter	Method	Quant Limit	Result (mg/kg)	Date Prepared	Date Analyzed	IEA Analyst	Prep Run	Prep Batch
ALUMINUM	SW846 6010	24.8	5720	07/24/97	07/26/97	RH	R12056	07249704P
ANTIMONY	SW846 6010	7.43	BQL	07/24/97	07/26/97	RH	R12056	07249704P
ARSENIC	SW846 6010	1.24	5.85	07/24/97	07/26/97	RH	R12056	07249704P
BARIUM	SW846 6010	24.8	170	07/24/97	07/26/97	RH	R12056	07249704P
BERYLLIUM	SW846 6010	0.619	BQL	07/24/97	07/26/97	RH	R12056	07249704P
CADMIUM	SW846 6010	0.619	3.12	07/24/97	07/26/97	RH	R12056	07249704P
CALCIUM	SW846 6010	619	10000	07/24/97	07/26/97	RH	R12056	07249704P
CHROMIUM	SW846 6010	1.24	57.3	07/28/97	07/29/97	FXW	R12092	07289704P
COBALT	SW846 6010	6.19	BQL	07/24/97	07/26/97	RH	R12056	07249704P
COPPER	SW846 6010	3.10	295	07/24/97	07/26/97	RH	R12056	07249704P
IRON	SW846 6010	12.4	13500	07/28/97	07/29/97	FXW	R12092	07289704P
LEAD	SW846 6010	0.371	294	07/24/97	07/26/97	RH	R12056	07249704P
MAGNESIUM	SW846 6010	619	4220	07/24/97	07/26/97	RH	R12056	07249704P
MANGANESE	SW846 6010	1.86	191	07/24/97	07/26/97	RH	R12056	07249704P
MERCURY	SW846 7471	0.124	0.320	07/29/97	07/30/97	PW	R12112	07299701H
CKEL	SW846 6010	4.95	14.5	07/24/97	07/26/97	RH	R12056	07249704P
TASSIUM	SW846 6010	619	659	07/24/97	07/26/97	RH	R12056	07249704P
SELENIUM	SW846 6010	0.619	BQL	07/24/97	07/26/97	RH	R12056	07249704P
SILVER	SW846 6010	1.24	BQL	07/24/97	07/26/97	RH	R12056	07249704P
SODIUM	SW846 6010	619	744	07/24/97	07/26/97	RH	R12056	07249704P
THALLIUM	SW846 6010	1.24	BQL	07/24/97	07/26/97	RH	R12056	07249704P
VANADIUM	SW846 6010	6.19	12.2	07/24/97	07/26/97	RH	R12056	07249704P
ZINC	SW846 6010	2.48	7260	07/28/97	07/28/97	FXW	R12100	07249704P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
Level 2 Metals Results Report

IEA Project #: 2436\_001

IEA Sample #: 970740303

Matrix: SOIL

Client Name: Focus Environmental, Inc.

Date Received: 07/21/97

Client Proj. I.D.: 119603 ACS Site

Date Sampled: 07/17/97

Sample I.D.: D01-S-IEA

Parameter	Method	Quant Limit	Result (mg/kg)	Date Prepared	Date Analyzed	IEA Analyst	Prep Run	Prep Batch
ALUMINUM	SW846 6010	25.8	8230	07/24/97	07/26/97	RH	R12056	07249704P
ANTIMONY	SW846 6010	7.75	164	07/24/97	07/26/97	RH	R12056	07249704P
ARSENIC	SW846 6010	1.29	4.08	07/24/97	07/26/97	RH	R12056	07249704P
BARIUM	SW846 6010	25.8	2690	07/24/97	07/26/97	RH	R12056	07249704P
BERYLLIUM	SW846 6010	0.646	BQL	07/24/97	07/26/97	RH	R12056	07249704P
CADMIUM	SW846 6010	0.646	106	07/24/97	07/26/97	RH	R12056	07249704P
CALCIUM	SW846 6010	646	24600	07/24/97	07/26/97	RH	R12056	07249704P
CHROMIUM	SW846 6010	1.29	1480	07/24/97	07/26/97	RH	R12056	07249704P
COBALT	SW846 6010	6.46	32.9	07/24/97	07/26/97	RH	R12056	07249704P
COPPER	SW846 6010	3.23	1130	07/24/97	07/26/97	RH	R12056	07249704P
IRON	SW846 6010	12.9	19200	07/24/97	07/26/97	RH	R12056	07249704P
LEAD	SW846 6010	0.388	10200	07/24/97	07/28/97	FXW	R12100	07249704P
MAGNESIUM	SW846 6010	646	5880	07/24/97	07/26/97	RH	R12056	07249704P
MANGANESE	SW846 6010	1.94	402	07/24/97	07/26/97	RH	R12056	07249704P
MERCURY	SW846 7471	0.129	0.809	07/29/97	07/30/97	PW	R12112	07299701H
CKEL	SW846 6010	5.17	53.3	07/24/97	07/26/97	RH	R12056	07249704P
TASSIUM	SW846 6010	646	BQL	07/24/97	07/26/97	RH	R12056	07249704P
SELENIUM	SW846 6010	0.646	8.32	07/24/97	07/26/97	RH	R12056	07249704P
SILVER	SW846 6010	1.29	34.9	07/24/97	07/26/97	RH	R12056	07249704P
SODIUM	SW846 6010	646	1170	07/24/97	07/26/97	RH	R12056	07249704P
THALLIUM	SW846 6010	1.29	BQL	07/24/97	07/26/97	RH	R12056	07249704P
VANADIUM	SW846 6010	6.46	10.5	07/24/97	07/26/97	RH	R12056	07249704P
ZINC	SW846 6010	2.58	8290	07/24/97	07/28/97	FXW	R12100	07249704P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
 Level 2 Metals Results Report

IEA Project #: 2436\_001

IEA Sample #: 970740304

Matrix: SOIL

Client Name: Focus Environmental, Inc.

Date Received: 07/21/97

Client Proj. I.D.: 119603 ACS Site

Date Sampled: 07/17/97

Sample I.D.: KP01-S-IEA

Parameter	Method	Quant Limit	Result (mg/kg)	Date Prepared	Date Analyzed	IEA Analyst	Prep Run	Batch
ALUMINUM	SW846 6010	24.4	5210	07/24/97	07/26/97	RH	R12056	07249704P
ANTIMONY	SW846 6010	7.30	BQL	07/24/97	07/26/97	RH	R12056	07249704P
ARSENIC	SW846 6010	1.22	4.94	07/24/97	07/26/97	RH	R12056	07249704P
BARIUM	SW846 6010	24.4	232	07/24/97	07/26/97	RH	R12056	07249704P
BERYLLIUM	SW846 6010	0.609	BQL	07/24/97	07/26/97	RH	R12056	07249704P
CADMIUM	SW846 6010	0.609	11.0	07/24/97	07/26/97	RH	R12056	07249704P
CALCIUM	SW846 6010	609	23600	07/24/97	07/26/97	RH	R12056	07249704P
CHROMIUM	SW846 6010	1.22	161	07/24/97	07/26/97	RH	R12056	07249704P
COBALT	SW846 6010	6.09	10.8	07/24/97	07/26/97	RH	R12056	07249704P
COPPER	SW846 6010	3.04	74.7	07/24/97	07/26/97	RH	R12056	07249704P
IRON	SW846 6010	12.2	9140	07/24/97	07/26/97	RH	R12056	07249704P
LEAD	SW846 6010	0.365	822	07/24/97	07/26/97	RH	R12056	07249704P
MAGNESIUM	SW846 6010	609	11300	07/24/97	07/26/97	RH	R12056	07249704P
MANGANESE	SW846 6010	1.83	456	07/24/97	07/26/97	RH	R12056	07249704P
MERCURY	SW846 7471	0.122	2.88	07/29/97	07/30/97	PW	R12112	07299701H
CKEL	SW846 6010	4.87	13.1	07/24/97	07/26/97	RH	R12056	07249704P
JTASSIUM	SW846 6010	609	1040	07/24/97	07/26/97	RH	R12056	07249704P
SELENIUM	SW846 6010	0.609	1.46	07/24/97	07/26/97	RH	R12056	07249704P
SILVER	SW846 6010	1.22	BQL	07/24/97	07/26/97	RH	R12056	07249704P
SODIUM	SW846 6010	609	BQL	07/24/97	07/26/97	RH	R12056	07249704P
THALLIUM	SW846 6010	1.22	BQL	07/24/97	07/26/97	RH	R12056	07249704P
VANADIUM	SW846 6010	6.09	11.7	07/24/97	07/26/97	RH	R12056	07249704P
ZINC	SW846 6010	2.44	306	07/24/97	07/26/97	RH	R12056	07249704P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
 Level 2 Metals Results Report

IEA Project #: 2436\_001

IEA Sample #: 970740305

Matrix: SOIL

Client Name: Focus Environmental, Inc.

Date Received: 07/21/97

Client Proj. I.D.: 119603 ACS Site

Date Sampled: 07/17/97

Sample I.D.: SA02-S-IEA

Parameter	Method	Quant Limit	Result (mg/kg)	Date Prepared	Date Analyzed	IEA Analyst	Prep Run	Prep Batch
ALUMINUM	SW846 6010	28.1	3210	07/24/97	07/26/97	RH	R12056	07249704P
ANTIMONY	SW846 6010	8.44	31.7	07/24/97	07/26/97	RH	R12056	07249704P
ARSENIC	SW846 6010	1.41	4.24	07/24/97	07/26/97	RH	R12056	07249704P
BARIUM	SW846 6010	28.1	1120	07/24/97	07/26/97	RH	R12056	07249704P
BERYLLIUM	SW846 6010	0.703	BQL	07/24/97	07/26/97	RH	R12056	07249704P
CADMIUM	SW846 6010	0.703	40.6	07/24/97	07/26/97	RH	R12056	07249704P
CALCIUM	SW846 6010	703	7350	07/24/97	07/26/97	RH	R12056	07249704P
CHROMIUM	SW846 6010	1.41	551	07/24/97	07/26/97	RH	R12056	07249704P
COBALT	SW846 6010	7.03	22.1	07/24/97	07/26/97	RH	R12056	07249704P
COPPER	SW846 6010	3.52	1320	07/24/97	07/26/97	RH	R12056	07249704P
IRON	SW846 6010	14.1	7780	07/24/97	07/26/97	RH	R12056	07249704P
LEAD	SW846 6010	0.422	2490	07/24/97	07/26/97	RH	R12056	07249704P
MAGNESIUM	SW846 6010	703	1280	07/24/97	07/26/97	RH	R12056	07249704P
MANGANESE	SW846 6010	2.11	104	07/24/97	07/26/97	RH	R12056	07249704P
MERCURY	SW846 7471	0.141	7.85	07/29/97	07/30/97	PW	R12112	07299701H
CKEL	SW846 6010	5.62	14.7	07/24/97	07/26/97	RH	R12056	07249704P
ATASSIUM	SW846 6010	703	BQL	07/24/97	07/26/97	RH	R12056	07249704P
SELENIUM	SW846 6010	0.703	3.98	07/24/97	07/26/97	RH	R12056	07249704P
SILVER	SW846 6010	1.41	3.77	07/24/97	07/26/97	RH	R12056	07249704P
SODIUM	SW846 6010	703	BQL	07/24/97	07/26/97	RH	R12056	07249704P
THALLIUM	SW846 6010	1.41	BQL	07/24/97	07/26/97	RH	R12056	07249704P
VANADIUM	SW846 6010	7.03	BQL	07/24/97	07/26/97	RH	R12056	07249704P
ZINC	SW846 6010	2.81	894	07/24/97	07/26/97	RH	R12056	07249704P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
 Level 2 Metals Results Report

IEA Project #: 2436\_001

IEA Sample #: 970740306

Matrix: SOIL

Client Name: Focus Environmental, Inc.

Date Received: 07/21/97

Client Proj. I.D.: 119603 ACS Site

Date Sampled: 07/18/97

Sample I.D.: T12-S-IEA

Parameter	Method	Quant Limit	Result (mg/kg)	Date Prepared	Date Analyzed	IEA Run	Prep Batch
ALUMINUM	SW846 6010	22.2	2670	07/24/97	07/26/97 RH	R12056	07249704P
ANTIMONY	SW846 6010	6.65	BQL	07/24/97	07/26/97 RH	R12056	07249704P
ARSENIC	SW846 6010	1.11	2.26	07/24/97	07/26/97 RH	R12056	07249704P
BARIUM	SW846 6010	22.2	31.0	07/24/97	07/26/97 RH	R12056	07249704P
BERYLLIUM	SW846 6010	0.554	BQL	07/24/97	07/26/97 RH	R12056	07249704P
CADMIUM	SW846 6010	0.554	0.829	07/24/97	07/26/97 RH	R12056	07249704P
CALCIUM	SW846 6010	554	4340	07/24/97	07/26/97 RH	R12056	07249704P
CHROMIUM	SW846 6010	1.11	13.8	07/28/97	07/29/97 FXW	R12092	07289704P
COBALT	SW846 6010	5.54	BQL	07/24/97	07/26/97 RH	R12056	07249704P
COPPER	SW846 6010	2.77	748	07/24/97	07/26/97 RH	R12056	07249704P
IRON	SW846 6010	11.1	3760	07/24/97	07/26/97 RH	R12056	07249704P
LEAD	SW846 6010	0.332	60.2	07/24/97	07/26/97 RH	R12056	07249704P
MAGNESIUM	SW846 6010	554	1430	07/24/97	07/26/97 RH	R12056	07249704P
MANGANESE	SW846 6010	1.66	148	07/24/97	07/26/97 RH	R12056	07249704P
MERCURY	SW846 7471	0.111	BQL	07/29/97	07/30/97 PW	R12112	07299701H
CKEL.	SW846 6010	4.43	4.63	07/24/97	07/26/97 RH	R12056	07249704P
TASSIUM	SW846 6010	554	BQL	07/24/97	07/26/97 RH	R12056	07249704P
SELENIUM	SW846 6010	0.554	BQL	07/24/97	07/26/97 RH	R12056	07249704P
SILVER	SW846 6010	1.11	BQL	07/24/97	07/26/97 RH	R12056	07249704P
SODIUM	SW846 6010	554	BQL	07/24/97	07/26/97 RH	R12056	07249704P
THALLIUM	SW846 6010	1.11	BQL	07/24/97	07/26/97 RH	R12056	07249704P
VANADIUM	SW846 6010	5.54	7.05	07/24/97	07/26/97 RH	R12056	07249704P
ZINC	SW846 6010	2.22	185	07/24/97	07/26/97 RH	R12056	07249704P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
 Level 2 Metals Results Report

IEA Project #: 2436\_001  
 IEA Sample #: 970740307  
 Client Name: Focus Environmental, Inc.  
 Client Proj. I.D.: 119603 ACS Site  
 Sample I.D.: SA01-S-IEA-02.

Matrix: SOIL  
 Date Received: 07/21/97  
 Date Sampled: 07/18/97

Parameter	Method	Quant Limit	Result (mg/kg)	Date Prepared	Date Analyzed	IEA Analyst	Run	Prep Batch
ALUMINUM	SW846 6010	21.5	3900	07/24/97	07/26/97	RH	R12056	07249704P
ANTIMONY	SW846 6010	6.44	BQL	07/24/97	07/26/97	RH	R12056	07249704P
ARSENIC	SW846 6010	1.07	3.78	07/24/97	07/26/97	RH	R12056	07249704P
BARIUM	SW846 6010	21.5	62.7	07/24/97	07/26/97	RH	R12056	07249704P
BERYLLIUM	SW846 6010	0.537	BQL	07/24/97	07/26/97	RH	R12056	07249704P
CADMIUM	SW846 6010	0.537	2.01	07/24/97	07/26/97	RH	R12056	07249704P
CALCIUM	SW846 6010	537	26200	07/24/97	07/26/97	RH	R12056	07249704P
CHROMIUM	SW846 6010	1.07	10.4	07/28/97	07/29/97	FXW	R12092	07289704P
COBALT	SW846 6010	5.37	5.62	07/24/97	07/26/97	RH	R12056	07249704P
COPPER	SW846 6010	2.68	35.9	07/24/97	07/26/97	RH	R12056	07249704P
IRON	SW846 6010	10.7	7110	07/24/97	07/26/97	RH	R12056	07249704P
LEAD	SW846 6010	0.322	147	07/24/97	07/26/97	RH	R12056	07249704P
MAGNESIUM	SW846 6010	537	11600	07/24/97	07/26/97	RH	R12056	07249704P
MANGANESE	SW846 6010	1.61	299	07/24/97	07/26/97	RH	R12056	07249704P
MERCURY	SW846 7471	0.107	0.402	07/29/97	07/30/97	PW	R12112	07299701H
CKEL	SW846 6010	4.29	10.1	07/24/97	07/26/97	RH	R12056	07249704P
TASSIUM	SW846 6010	537	1610	07/24/97	07/26/97	RH	R12056	07249704P
SELENIUM	SW846 6010	0.537	BQL	07/24/97	07/26/97	RH	R12056	07249704P
SILVER	SW846 6010	1.07	BQL	07/24/97	07/26/97	RH	R12056	07249704P
SODIUM	SW846 6010	537	BQL	07/24/97	07/26/97	RH	R12056	07249704P
THALLIUM	SW846 6010	1.07	BQL	07/24/97	07/26/97	RH	R12056	07249704P
VANADIUM	SW846 6010	5.37	8.80	07/24/97	07/26/97	RH	R12056	07249704P
ZINC	SW846 6010	2.15	101	07/24/97	07/26/97	RH	R12056	07249704P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
 Level 2 Metals Results Report

IEA Project #: 2436\_001

IEA Sample #: 970740308

Matrix: SOIL

Client Name: Focus Environmental, Inc.

Date Received: 07/21/97

Client Proj. I.D.: 119603 ACS Site

Date Sampled: 07/18/97

Sample I.D.: SA01-S-IEA-01

Parameter	Method	Quant Limit	Result (mg/kg)	Date Prepared	Date Analyzed	IEA Run	Prep Batch
ALUMINUM	SW846 6010	25.7	3780	07/24/97	07/26/97 RH	R12056	07249704P
ANTIMONY	SW846 6010	7.70	13.3	07/24/97	07/26/97 RH	R12056	07249704P
ARSENIC	SW846 6010	1.28	3.46	07/24/97	07/26/97 RH	R12056	07249704P
BARIUM	SW846 6010	25.7	1210	07/24/97	07/26/97 RH	R12056	07249704P
BERYLLIUM	SW846 6010	0.642	BQL	07/24/97	07/26/97 RH	R12056	07249704P
CADMIUM	SW846 6010	0.642	2.19	07/24/97	07/26/97 RH	R12056	07249704P
CALCIUM	SW846 6010	642	10700	07/24/97	07/26/97 RH	R12056	07249704P
CHROMIUM	SW846 6010	1.28	753	07/24/97	07/26/97 RH	R12056	07249704P
COBALT	SW846 6010	6.42	BQL	07/24/97	07/26/97 RH	R12056	07249704P
COPPER	SW846 6010	3.21	71.5	07/24/97	07/26/97 RH	R12056	07249704P
IRON	SW846 6010	12.8	18600	07/24/97	07/26/97 RH	R12056	07249704P
LEAD	SW846 6010	0.385	4190	07/24/97	07/26/97 RH	R12056	07249704P
MAGNESIUM	SW846 6010	642	4540	07/24/97	07/26/97 RH	R12056	07249704P
MANGANESE	SW846 6010	1.93	164	07/24/97	07/26/97 RH	R12056	07249704P
MERCURY	SW846 7471	0.128	0.961	07/29/97	07/30/97 PW	R12112	07299701H
TICKEL	SW846 6010	5.14	26.9	07/24/97	07/26/97 RH	R12056	07249704P
TASSIUM	SW846 6010	642	BQL	07/24/97	07/26/97 RH	R12056	07249704P
SELENIUM	SW846 6010	0.642	BQL	07/24/97	07/26/97 RH	R12056	07249704P
SILVER	SW846 6010	1.28	BQL	07/24/97	07/26/97 RH	R12056	07249704P
SODIUM	SW846 6010	642	BQL	07/24/97	07/26/97 RH	R12056	07249704P
THALLIUM	SW846 6010	1.28	BQL	07/24/97	07/26/97 RH	R12056	07249704P
VANADIUM	SW846 6010	6.42	6.71	07/24/97	07/26/97 RH	R12056	07249704P
ZINC	SW846 6010	2.57	374	07/24/97	07/26/97 RH	R12056	07249704P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
 Level 2 Metals Results Report

IEA Project #: 2436\_001

IEA Sample #: 970740309

Matrix: SOIL

Client Name: Focus Environmental, Inc.

Date Received: 07/21/97

Client Proj. I.D.: 119603 ACS Site

Date Sampled: 07/18/97

Sample I.D.: SP01-S-IEA

Parameter	Method	Quant Limit	Result (mg/kg)	Date Prepared	Date Analyzed	IEA Run	Prep Batch
ALUMINUM	SW846 6010	23.1	3570	07/24/97	07/26/97 RH	R12056	07249704P
ANTIMONY	SW846 6010	6.94	15.5	07/24/97	07/26/97 RH	R12056	07249704P
ARSENIC	SW846 6010	1.16	2.97	07/24/97	07/26/97 RH	R12056	07249704P
BARIUM	SW846 6010	23.1	282	07/24/97	07/26/97 RH	R12056	07249704P
BERYLLIUM	SW846 6010	0.578	BQL	07/24/97	07/26/97 RH	R12056	07249704P
CADMIUM	SW846 6010	0.578	20.6	07/24/97	07/26/97 RH	R12056	07249704P
CALCIUM	SW846 6010	578	13100	07/24/97	07/26/97 RH	R12056	07249704P
CHROMIUM	SW846 6010	1.16	225	07/24/97	07/26/97 RH	R12056	07249704P
COBALT	SW846 6010	5.78	8.42	07/24/97	07/26/97 RH	R12056	07249704P
COPPER	SW846 6010	2.89	155	07/24/97	07/26/97 RH	R12056	07249704P
IRON	SW846 6010	11.6	5700	07/24/97	07/26/97 RH	R12056	07249704P
LEAD	SW846 6010	0.347	986	07/24/97	07/26/97 RH	R12056	07249704P
MAGNESIUM	SW846 6010	578	5190	07/24/97	07/26/97 RH	R12056	07249704P
MANGANESE	SW846 6010	1.74	162	07/24/97	07/26/97 RH	R12056	07249704P
MERCURY	SW846 7471	0.116	3.88	07/29/97	07/30/97 PW	R12112	07299701H
CKEL	SW846 6010	4.63	14.8	07/24/97	07/26/97 RH	R12056	07249704P
TASSIUM	SW846 6010	578	BQL	07/24/97	07/26/97 RH	R12056	07249704P
SELENIUM	SW846 6010	0.578	1.88	07/24/97	07/26/97 RH	R12056	07249704P
SILVER	SW846 6010	1.16	2.45	07/24/97	07/26/97 RH	R12056	07249704P
SODIUM	SW846 6010	578	BQL	07/24/97	07/26/97 RH	R12056	07249704P
THALLIUM	SW846 6010	1.16	BQL	07/24/97	07/26/97 RH	R12056	07249704P
VANADIUM	SW846 6010	5.78	6.03	07/24/97	07/26/97 RH	R12056	07249704P
ZINC	SW846 6010	2.31	718	07/24/97	07/26/97 RH	R12056	07249704P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
 Level 2 Metals Results Report

IEA Project #: 2436\_001  
 IEA Sample #: 970740310  
 Client Name: Focus Environmental, Inc.  
 Client Proj. I.D.: 119603 ACS Site  
 Sample I.D.: SP02-S-IEA

Matrix: SOIL  
 Date Received: 07/21/97  
 Date Sampled: 07/18/97

Parameter	Method	Quant Limit	Result (mg/kg)	Date Prepared	Date Analyzed	IEA Run	Prep Batch
ALUMINUM	SW846 6010	24.0	3070	07/24/97	07/26/97 RH	R12056	07249704P
ANTIMONY	SW846 6010	7.22	29.0	07/24/97	07/26/97 RH	R12056	07249704P
ARSENIC	SW846 6010	1.20	3.53	07/24/97	07/26/97 RH	R12056	07249704P
BARIUM	SW846 6010	24.0	417	07/24/97	07/26/97 RH	R12056	07249704P
BERYLLIUM	SW846 6010	0.601	BQL	07/24/97	07/26/97 RH	R12056	07249704P
CADMIUM	SW846 6010	0.601	32.2	07/24/97	07/26/97 RH	R12056	07249704P
CALCIUM	SW846 6010	601	13400	07/24/97	07/26/97 RH	R12056	07249704P
CHROMIUM	SW846 6010	1.20	360	07/24/97	07/26/97 RH	R12056	07249704P
COBALT	SW846 6010	6.01	9.08	07/24/97	07/26/97 RH	R12056	07249704P
COPPER	SW846 6010	3.01	136	07/24/97	07/26/97 RH	R12056	07249704P
IRON	SW846 6010	12.0	5400	07/24/97	07/26/97 RH	R12056	07249704P
LEAD	SW846 6010	0.361	1760	07/24/97	07/26/97 RH	R12056	07249704P
MAGNESIUM	SW846 6010	601	4870	07/24/97	07/26/97 RH	R12056	07249704P
MANGANESE	SW846 6010	1.80	152	07/24/97	07/26/97 RH	R12056	07249704P
MERCURY	SW846 7471	0.120	6.35	07/29/97	07/30/97 PW	R12112	07299701H
CKEL	SW846 6010	4.81	10.3	07/24/97	07/26/97 RH	R12056	07249704P
TASSIUM	SW846 6010	601	BQL	07/24/97	07/26/97 RH	R12056	07249704P
SELENIUM	SW846 6010	0.601	3.40	07/24/97	07/26/97 RH	R12056	07249704P
SILVER	SW846 6010	1.20	2.94	07/24/97	07/26/97 RH	R12056	07249704P
SODIUM	SW846 6010	601	BQL	07/24/97	07/26/97 RH	R12056	07249704P
THALLIUM	SW846 6010	1.20	BQL	07/24/97	07/26/97 RH	R12056	07249704P
VANADIUM	SW846 6010	6.01	BQL	07/24/97	07/26/97 RH	R12056	07249704P
ZINC	SW846 6010	2.40	628	07/24/97	07/26/97 RH	R12056	07249704P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
 Level 2 Metals Results Report

IEA Project #: 2436\_001

IEA Sample #: 970740311

Matrix: OIL

Client Name: Focus Environmental, Inc.

Date Received: 07/21/97

Client Proj. I.D.: 119603 ACS Site

Date Sampled: 07/17/97

Sample I.D.: SA04-0-IEA-01

Parameter	Method	Quant Limit	Result (mg/kg)	Date Prepared	Date Analyzed	IEA Analyst	Run	Prep Batch
ALUMINUM	SW846 6010	85.0	177	07/24/97	07/26/97	RH	R12056	07249704P
ANTIMONY	SW846 6010	25.5	BQL	07/24/97	07/26/97	RH	R12056	07249704P
ARSENIC	SW846 6010	4.25	BQL	07/24/97	07/26/97	RH	R12056	07249704P
BARIUM	SW846 6010	85.0	BQL	07/24/97	07/26/97	RH	R12056	07249704P
BERYLLIUM	SW846 6010	2.12	BQL	07/24/97	07/26/97	RH	R12056	07249704P
CADMIUM	SW846 6010	2.12	BQL	07/24/97	07/26/97	RH	R12056	07249704P
CALCIUM	SW846 6010	2120	BQL	07/24/97	07/26/97	RH	R12056	07249704P
CHROMIUM	SW846 6010	4.25	26.5	07/28/97	07/29/97	FXW	R12092	07289704P
COBALT	SW846 6010	21.2	BQL	07/24/97	07/26/97	RH	R12056	07249704P
COPPER	SW846 6010	10.6	12.1	07/24/97	07/26/97	RH	R12056	07249704P
IRON	SW846 6010	42.5	5960	07/24/97	07/26/97	RH	R12056	07249704P
LEAD	SW846 6010	1.28	171	07/24/97	07/26/97	RH	R12056	07249704P
MAGNESIUM	SW846 6010	2120	BQL	07/24/97	07/26/97	RH	R12056	07249704P
MANGANESE	SW846 6010	6.38	BQL	07/24/97	07/26/97	RH	R12056	07249704P
MERCURY	SW846 7471	0.425	BQL	07/29/97	07/30/97	PW	R12112	07299701H
NECKEL	SW846 6010	17.0	BQL	07/24/97	07/26/97	RH	R12056	07249704P
POTASSIUM	SW846 6010	2120	BQL	07/24/97	07/26/97	RH	R12056	07249704P
SELENIUM	SW846 6010	2.12	BQL	07/24/97	07/26/97	RH	R12056	07249704P
SILVER	SW846 6010	4.25	BQL	07/24/97	07/26/97	RH	R12056	07249704P
SODIUM	SW846 6010	2120	BQL	07/24/97	07/26/97	RH	R12056	07249704P
THALLIUM	SW846 6010	4.25	BQL	07/24/97	07/26/97	RH	R12056	07249704P
VANADIUM	SW846 6010	21.2	BQL	07/24/97	07/26/97	RH	R12056	07249704P
ZINC	SW846 6010	8.50	1120	07/24/97	07/26/97	RH	R12056	07249704P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
 Level 2 Metals Results Report

IEA Project #: 2436\_001

IEA Sample #: 970740313

Matrix: OIL

Client Name: Focus Environmental, Inc.

Date Received: 07/21/97

Client Proj. I.D.: 119603 ACS Site

Date Sampled: 07/17/97

Sample I.D.: SA02-0-IEA-01.

Parameter	Method	Quant Limit	Result (mg/kg)	Date Prepared	Date Analyzed	IEA Run	Prep Batch
ALUMINUM	SW846 6010	320	26000	07/24/97	07/26/97 RH	R12056	07249704P
ANTIMONY	SW846 6010	96.0	168	07/24/97	07/26/97 RH	R12056	07249704P
ARSENIC	SW846 6010	16.0	65.2	07/24/97	07/26/97 RH	R12056	07249704P
BARIUM	SW846 6010	320	2720	07/24/97	07/26/97 RH	R12056	07249704P
BERYLLIUM	SW846 6010	8.00	BQL	07/24/97	07/26/97 RH	R12056	07249704P
CADMIUM	SW846 6010	8.00	224	07/24/97	07/26/97 RH	R12056	07249704P
CALCIUM	SW846 6010	8000	149000	07/24/97	07/26/97 RH	R12056	07249704P
CHROMIUM	SW846 6010	16.0	2760	07/24/97	07/26/97 RH	R12056	07249704P
COBALT	SW846 6010	80.0	262	07/24/97	07/26/97 RH	R12056	07249704P
COPPER	SW846 6010	40.0	20100	07/24/97	07/26/97 RH	R12056	07249704P
IRON	SW846 6010	160	200000	07/24/97	07/26/97 RH	R12056	07249704P
LEAD	SW846 6010	4.80	19600	07/24/97	07/26/97 RH	R12056	07249704P
MAGNESIUM	SW846 6010	8000	9130	07/24/97	07/26/97 RH	R12056	07249704P
MANGANESE	SW846 6010	24.0	1440	07/24/97	07/26/97 RH	R12056	07249704P
MERCURY	SW846 7471	1.60	BQL	07/29/97	07/30/97 PW	R12112	07299701H
CKEL	SW846 6010	64.0	334	07/24/97	07/26/97 RH	R12056	07249704P
PASSIUM	SW846 6010	8000	BQL	07/24/97	07/26/97 RH	R12056	07249704P
SELENIUM	SW846 6010	8.00	16.8	07/24/97	07/26/97 RH	R12056	07249704P
SILVER	SW846 6010	16.0	BQL	07/24/97	07/26/97 RH	R12056	07249704P
SODIUM	SW846 6010	8000	13000	07/24/97	07/26/97 RH	R12056	07249704P
THALLIUM	SW846 6010	16.0	BQL	07/24/97	07/26/97 RH	R12056	07249704P
VANADIUM	SW846 6010	80.0	BQL	07/24/97	07/26/97 RH	R12056	07249704P
ZINC	SW846 6010	32.0	12800	07/24/97	07/26/97 RH	R12056	07249704P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
Level 2 Metals Results Report

IEA Project #: 2436\_001

IEA Sample #: 970740314

Matrix: OIL

Client Name: Focus Environmental, Inc.

Date Received: 07/21/97

Client Proj. I.D.: 119603 ACS Site

Date Sampled: 07/17/97

Sample I.D.: SA02-0-IEA-02

Parameter	Method	Quant Limit	Result (mg/kg)	Date Prepared	Date Analyzed	IEA Run	Prep Batch
ALUMINUM	SW846 6010	38.1	472	07/24/97	07/26/97 RH	R12056	07249704P
ANTIMONY	SW846 6010	11.4	BQL	07/24/97	07/26/97 RH	R12056	07249704P
ARSENIC	SW846 6010	1.90	2.98	07/24/97	07/26/97 RH	R12056	07249704P
BARIUM	SW846 6010	38.1	BQL	07/24/97	07/26/97 RH	R12056	07249704P
BERYLLIUM	SW846 6010	0.952	BQL	07/24/97	07/26/97 RH	R12056	07249704P
CADMIUM	SW846 6010	0.952	2.58	07/24/97	07/26/97 RH	R12056	07249704P
CALCIUM	SW846 6010	952	BQL	07/24/97	07/26/97 RH	R12056	07249704P
CHROMIUM	SW846 6010	1.90	88.2	07/24/97	07/26/97 RH	R12056	07249704P
COBALT	SW846 6010	9.52	9.72	07/24/97	07/26/97 RH	R12056	07249704P
COPPER	SW846 6010	4.76	181	07/24/97	07/26/97 RH	R12056	07249704P
IRON	SW846 6010	19.0	1090	07/24/97	07/26/97 RH	R12056	07249704P
LEAD	SW846 6010	0.571	51.1	07/24/97	07/26/97 RH	R12056	07249704P
MAGNESIUM	SW846 6010	952	BQL	07/24/97	07/26/97 RH	R12056	07249704P
MANGANESE	SW846 6010	2.86	BQL	07/24/97	07/26/97 RH	R12056	07249704P
MERCURY	SW846 7471	0.190	2.83	07/29/97	07/30/97 PW	R12112	07299701H
CKEL	SW846 6010	7.62	BQL	07/24/97	07/26/97 RH	R12056	07249704P
PASSIUM	SW846 6010	952	BQL	07/24/97	07/26/97 RH	R12056	07249704P
SELENIUM	SW846 6010	0.952	3.74	07/24/97	07/26/97 RH	R12056	07249704P
SILVER	SW846 6010	1.90	BQL	07/24/97	07/26/97 RH	R12056	07249704P
SODIUM	SW846 6010	952	BQL	07/24/97	07/26/97 RH	R12056	07249704P
THALLIUM	SW846 6010	1.90	BQL	07/24/97	07/26/97 RH	R12056	07249704P
VANADIUM	SW846 6010	9.52	BQL	07/24/97	07/26/97 RH	R12056	07249704P
ZINC	SW846 6010	3.81	75.9	07/24/97	07/26/97 RH	R12056	07249704P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
 Level 2 Metals Results Report  
 PREPARATION BLANKS

IEA Project #: 2436\_001

Matrix: SOIL

Client Name: Focus Environmental, Inc.

Client Proj. I.D.: 119603 ACS Site

Sample Number: PBS 07249704P

Parameter	Method	Quant Limit	Result (mg/kg)	Date Prepared	Date Analyzed	IEA Analyst	Prep Run	Prep Batch
ALUMINUM	SW846 6010	20.0	BQL	07/24/97	07/26/97	RH	R12056	07249704P
ANTIMONY	SW846 6010	6.00	BQL	07/24/97	07/26/97	RH	R12056	07249704P
ARSENIC	SW846 6010	1.00	BQL	07/24/97	07/26/97	RH	R12056	07249704P
BARIUM	SW846 6010	20.0	BQL	07/24/97	07/26/97	RH	R12056	07249704P
BERYLLIUM	SW846 6010	0.500	BQL	07/24/97	07/26/97	RH	R12056	07249704P
CADMIUM	SW846 6010	0.500	BQL	07/24/97	07/26/97	RH	R12056	07249704P
CALCIUM	SW846 6010	500	BQL	07/24/97	07/26/97	RH	R12056	07249704P
CHROMIUM	SW846 6010	1.00	4.64	07/24/97	07/26/97	RH	R12056	07249704P
COBALT	SW846 6010	5.00	BQL	07/24/97	07/26/97	RH	R12056	07249704P
COPPER	SW846 6010	2.50	BQL	07/24/97	07/26/97	RH	R12056	07249704P
IRON	SW846 6010	10.0	20.5	07/24/97	07/26/97	RH	R12056	07249704P
LEAD	SW846 6010	0.300	BQL	07/24/97	07/26/97	RH	R12056	07249704P
MAGNESIUM	SW846 6010	500	BQL	07/24/97	07/26/97	RH	R12056	07249704P
MANGANESE	SW846 6010	1.50	BQL	07/24/97	07/26/97	RH	R12056	07249704P
NICKEL	SW846 6010	4.00	BQL	07/24/97	07/26/97	RH	R12056	07249704P
POTASSIUM	SW846 6010	500	BQL	07/24/97	07/26/97	RH	R12056	07249704P
SELENIUM	SW846 6010	0.500	BQL	07/24/97	07/26/97	RH	R12056	07249704P
SILVER	SW846 6010	1.00	BQL	07/24/97	07/26/97	RH	R12056	07249704P
SODIUM	SW846 6010	500	BQL	07/24/97	07/26/97	RH	R12056	07249704P
THALLIUM	SW846 6010	1.00	BQL	07/24/97	07/26/97	RH	R12056	07249704P
VANADIUM	SW846 6010	5.00	BQL	07/24/97	07/26/97	RH	R12056	07249704P
ZINC	SW846 6010	2.00	BQL	07/24/97	07/26/97	RH	R12056	07249704P

Corresponding Samples:

970727504, 970727505, 970727506, 970740301, 970740302, 970740303,  
 970740304, 970740305, 970740306, 970740307, 970740308, 970740309,  
 970740310, 970740311, 970740312, 970740313, 970740314, 970742602

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
 Level 2 Metals Results Report  
 PREPARATION BLANKS

IEA Project #: 2436\_001

Matrix: SOIL

Client Name: Focus Environmental, Inc.

Client Proj. I.D.: 119603 ACS Site

Sample Number: PBS 07289704P

Parameter	Method	Quant Limit	Result (mg/kg)	Date Prepared	Date Analyzed	IEA Analyst	Prep Run	Batch
ALUMINUM	SW846 6010	20.0	BQL	07/28/97	07/29/97	FXW	R12092	07289704P
ANTIMONY	SW846 6010	6.00	BQL	07/28/97	07/29/97	FXW	R12092	07289704P
BARIUM	SW846 6010	20.0	BQL	07/28/97	07/29/97	FXW	R12092	07289704P
BERYLLIUM	SW846 6010	0.500	BQL	07/28/97	07/29/97	FXW	R12092	07289704P
CADMIUM	SW846 6010	0.500	BQL	07/28/97	07/29/97	FXW	R12092	07289704P
CALCIUM	SW846 6010	500	BQL	07/28/97	07/29/97	FXW	R12092	07289704P
CHROMIUM	SW846 6010	1.00	BQL	07/28/97	07/29/97	FXW	R12092	07289704P
COBALT	SW846 6010	5.00	BQL	07/28/97	07/29/97	FXW	R12092	07289704P
COPPER	SW846 6010	2.50	BQL	07/28/97	07/29/97	FXW	R12092	07289704P
IRON	SW846 6010	10.0	BQL	07/28/97	07/29/97	FXW	R12092	07289704P
MAGNESIUM	SW846 6010	500	BQL	07/28/97	07/29/97	FXW	R12092	07289704P
MANGANESE	SW846 6010	1.50	BQL	07/28/97	07/29/97	FXW	R12092	07289704P
NICKEL	SW846 6010	4.00	BQL	07/28/97	07/29/97	FXW	R12092	07289704P
POTASSIUM	SW846 6010	500	BQL	07/28/97	07/29/97	FXW	R12092	07289704P
SILVER	SW846 6010	1.00	BQL	07/28/97	07/29/97	FXW	R12092	07289704P
VANADIUM	SW846 6010	5.00	BQL	07/28/97	07/29/97	FXW	R12092	07289704P
INC	SW846 6010	2.00	2.26	07/28/97	07/29/97	FXW	R12092	07289704P

Corresponding Samples:

970740302, 970740306, 970740307, 970740311, 970740312

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
Level 2 Metals Results Report  
PREPARATION BLANKS

IEA Project #: 2436\_001

Matrix: SOIL

Client Name: Focus Environmental, Inc.

Client Proj. I.D.: 119603 ACS Site

Sample Number: PBS 07299701H

Parameter	Method	Quant Limit	Result (mg/kg)	Date Prepared	Date Analyzed	IEA Run	Prep Batch
MERCURY	SW846 7471	0.100	BQL	07/29/97	07/30/97 PW	R12112	07299701H

Corresponding Samples:

970740301, 970740302, 970740303, 970740304, 970740305, 970740306,  
970740307, 970740308, 970740309, 970740310, 970740311, 970740312,  
970740313, 970740314, 970753201

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
 Level 2 Metals Results Report  
 LABORATORY CONTROL SAMPLE

IEA Project #: 2436\_001  
 IEA Sample #: LCSS 07249704P  
 Matrix: SOIL

Parameter	Method	Results (mg/kg)		Limits		%	Date Analyzed	IEA Run	Prep Batch
		True	Found	Lower	Upper				
ALUMINUM	SW846 6010	4500	3950	2820	6190	87.7	07/26/97	R12056	07249704P
ANTIMONY	SW846 6010	38.2	38.2	7.41	81.3	99.9	07/26/97	R12056	07249704P
ARSENIC	SW846 6010	103	104	74.3	133	101.	07/26/97	R12056	07249704P
BARIUM	SW846 6010	170	150	126	214	88.0	07/26/97	R12056	07249704P
BERYLLIUM	SW846 6010	120	118	91.2	148	98.1	07/26/97	R12056	07249704P
CADMIUM	SW846 6010	88.8	88.3	66.9	111	99.4	07/26/97	R12056	07249704P
CALCIUM	SW846 6010	1990	1830	1440	2530	92.2	07/26/97	R12056	07249704P
CHROMIUM	SW846 6010	133	132	104	163	99.6	07/26/97	R12056	07249704P
COBALT	SW846 6010	72.9	70.8	56.3	89.5	97.2	07/26/97	R12056	07249704P
COPPER	SW846 6010	85	81.4	68	102	95.8	07/26/97	R12056	07249704P
IRON	SW846 6010	7580	9030	4270	10900	119.	07/26/97	R12056	07249704P
LEAD	SW846 6010	86.4	81.4	58	115	94.2	07/26/97	R12056	07249704P
MAGNESIUM	SW846 6010	1180	1020	810	1560	86.6	07/26/97	R12056	07249704P
MANGANESE	SW846 6010	187	183	147	228	98.0	07/26/97	R12056	07249704P
NICKEL	SW846 6010	95.5	96.0	72.1	119	100.	07/26/97	R12056	07249704P
POTASSIUM	SW846 6010	2160	2020	1580	2740	93.4	07/26/97	R12056	07249704P
SELENIUM	SW846 6010	129	138	93.9	165	107.	07/26/97	R12056	07249704P
SLVER	SW846 6010	117	124	84.5	150	106.	07/26/97	R12056	07249704P
SODIUM	SW846 6010	392	BQL	258	526		07/26/97	R12056	07249704P
THALLIUM	SW846 6010	105	103	55.4	155	97.8	07/26/97	R12056	07249704P
VANADIUM	SW846 6010	73.5	72.3	47	100	98.4	07/26/97	R12056	07249704P
ZINC	SW846 6010	71.8	68.4	53.4	90.2	95.3	07/26/97	R12056	07249704P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
 Level 2 Metals Results Report  
 LABORATORY CONTROL SAMPLE

IEA Project #: 2436\_001  
 IEA Sample #: LCSS 07289704P  
 Matrix: SOIL

Parameter	Method	Results (mg/kg)		Limits		% RCY	Date Analyzed	IEA Run	Prep Batch
		True	Found	Lower	Upper				
ALUMINUM	SW846 6010	4500	4950	2820	6190	110.	07/29/97	R12092	07289704P
ANTIMONY	SW846 6010	38.2	38.8	7.41	81.3	102.	07/29/97	R12092	07289704P
BARIUM	SW846 6010	170	204	126	214	120.	07/29/97	R12092	07289704P
BERYLLIUM	SW846 6010	120	140	91.2	148	117.	07/29/97	R12092	07289704P
CADMIUM	SW846 6010	88.8	102	66.9	111	115.	07/29/97	R12092	07289704P
CALCIUM	SW846 6010	1990	2260	1440	2530	114.	07/29/97	R12092	07289704P
CHROMIUM	SW846 6010	133	159	104	163	120.	07/29/97	R12092	07289704P
COBALT	SW846 6010	72.9	86.9	56.3	89.5	119.	07/29/97	R12092	07289704P
COPPER	SW846 6010	85	104	68	102	122.	07/29/97	R12092	07289704P
IRON	SW846 6010	7580	10100	4270	10900	133.	07/29/97	R12092	07289704P
MAGNESIUM	SW846 6010	1180	1320	810	1560	112.	07/29/97	R12092	07289704P
MANGANESE	SW846 6010	187	219	147	228	117.	07/29/97	R12092	07289704P
NICKEL	SW846 6010	95.5	114	72.1	119	119.	07/29/97	R12092	07289704P
POTASSIUM	SW846 6010	2160	2450	1580	2740	113.	07/29/97	R12092	07289704P
SILVER	SW846 6010	117	154	84.5	150	132.	07/29/97	R12092	07289704P
VANADIUM	SW846 6010	73.5	88.6	47	100	120.	07/29/97	R12092	07289704P
NC	SW846 6010	71.8	80.7	53.4	90.2	112.	07/29/97	R12092	07289704P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
Level 2 Metals Results Report  
LABORATORY CONTROL SAMPLE

IEA Project #: 2436\_001  
IEA Sample #: LCSS 07299701H  
Matrix: SOIL

Parameter	Method	Results (mg/kg)		Limits		%	Date Analyzed	IEA Run	Prep Batch
		True	Found	Lower	Upper				
MERCURY	SW846 7471	9.99	9.92	5.25	15.6	99.3	07/30/97	R12112	07299701H

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
 Level 2 Metals Results Report  
 DUPLICATE ANALYSIS

IEA Project #: 2436\_001  
 IEA Sample #: 970727504  
 Matrix: SOIL

Parameter	Method	Duplicate Analysis						
		Sample (mg/kg)	Duplicate (mg/kg)	RPD %	Date Analyzed	Samp Run	Dup Run	Prep Batch
ALUMINUM	SW846 6010	3490	2660	27.1	07/26/97	R12056	R12056	07249704P
ANTIMONY	SW846 6010	BQL	BQL		07/26/97	R12056	R12056	07249704P
ARSENIC	SW846 6010	1.76	1.39	23.1	07/26/97	R12056	R12056	07249704P
BARIUM	SW846 6010	BQL	BQL		07/26/97	R12056	R12056	07249704P
BERYLLIUM	SW846 6010	BQL	BQL		07/26/97	R12056	R12056	07249704P
CADMIUM	SW846 6010	BQL	BQL		07/26/97	R12056	R12056	07249704P
CALCIUM	SW846 6010	30100	41300	31.4	07/26/97	R12056	R12056	07249704P
CHROMIUM	SW846 6010	45.8	30.5	40.0	07/26/97	R12056	R12056	07249704P
COBALT	SW846 6010	BQL	BQL		07/26/97	R12056	R12056	07249704P
COPPER	SW846 6010	BQL	BQL		07/26/97	R12056	R12056	07249704P
IRON	SW846 6010	5280	3250	47.5	07/26/97	R12056	R12056	07249704P
LEAD	SW846 6010	5.25	3.97	27.7	07/26/97	R12056	R12056	07249704P
MAGNESIUM	SW846 6010	770	761	1.11	07/26/97	R12056	R12056	07249704P
MANGANESE	SW846 6010	120	111	7.53	07/26/97	R12056	R12056	07249704P
NICKEL	SW846 6010	6.82	6.32	7.59	07/26/97	R12056	R12056	07249704P
POTASSIUM	SW846 6010	729	536	30.4	07/26/97	R12056	R12056	07249704P
SELENIUM	SW846 6010	BQL	BQL		07/26/97	R12056	R12056	07249704P
LIVER	SW846 6010	BQL	BQL		07/26/97	R12056	R12056	07249704P
DIUM	SW846 6010	BQL	BQL		07/26/97	R12056	R12056	07249704P
THALLIUM	SW846 6010	BQL	BQL		07/26/97	R12056	R12056	07249704P
VANADIUM	SW846 6010	7.83	5.72	31.2	07/26/97	R12056	R12056	07249704P
ZINC	SW846 6010	27.6	20.0	32.0	07/26/97	R12056	R12056	07249704P

S-D

$$RPD = \frac{S-D}{(S+D)/2} \times 100$$

Control Limits: +/- 20%

Corresponding Samples:

970727504, 970727505, 970727506, 970740301, 970740302, 970740303,  
 970740304, 970740305, 970740306, 970740307, 970740308, 970740309,  
 970740310, 970740311, 970740312, 970740313, 970740314, 970742309,  
 970742310, 970742411, 970742602

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
Level 2 Metals Results Report  
DUPLICATE ANALYSIS

IEA Project #: 2436\_001  
IEA Sample #: 970740302  
Matrix: SOIL

Parameter	Method	Duplicate Analysis						Prep Batch
		Sample (mg/kg)	Duplicate (mg/kg)	RPD %	Date Analyzed	Samp Run	Dup Run	
CHROMIUM	SW846 6010	57.3	62.6	8.94	07/29/97	R12092	R12092	07289704P
IRON	SW846 6010	13500	9090	39.2	07/29/97	R12092	R12092	07289704P

$$RPD = \frac{S-D}{(S+D)/2} \times 100 \quad \text{Control Limits: } +/- 20\%$$

Corresponding Samples:  
970740302, 970740306, 970740307, 970740311, 970740312

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
Level 2 Metals Results Report  
DUPLICATE ANALYSIS

IEA Project #: 2436\_001  
IEA Sample #: 970740314  
Matrix: SOIL

Parameter	Method	Duplicate Analysis						Prep Batch
		Sample (mg/kg)	Duplicate (mg/kg)	RPD %	Date Analyzed	Samp Run	Dup Run	
MERCURY	SW846 7471	2.83	1.47	63.3	07/30/97	R12112	R12112	07299701H

$$\text{RPD} = \frac{\text{S-D}}{(\text{S+D})/2} \times 100 \quad \text{Control Limits: } +/- 20\%$$

Corresponding Samples:

970740301, 970740302, 970740303, 970740304, 970740305, 970740306,  
970740307, 970740308, 970740309, 970740310, 970740311, 970740312,  
970740313, 970740314, 970753201

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
 Level 2 Metals Results Report  
 SPIKE RESULTS

IEA Project #: 2436\_001  
 IEA Sample #: 970727504  
 Matrix: SOIL

Spike Results (mg/kg)

Parameter	Method	SA	SR	SSR	%RCY	Date Analyzed	Samp Run	Spike Run	Prep Batch
ALUMINUM	SW846 6010	160	3490	4440	594.	07/26/97	R12056	R12056	07249704P
ANTIMONY	SW846 6010	40.1	BQL	24.8	61.8	07/26/97	R12056	R12056	07249704P
ARSENIC	SW846 6010	160	1.76	158	97.2	07/26/97	R12056	R12056	07249704P
BARIUM	SW846 6010	160	BQL	157	98.1	07/26/97	R12056	R12056	07249704P
BERYLLIUM	SW846 6010	4.01	BQL	4.00	99.6	07/26/97	R12056	R12056	07249704P
CADMIUM	SW846 6010	4.01	BQL	3.93	98.0	07/26/97	R12056	R12056	07249704P
CALCIUM	SW846 6010	1600	30100	43200	816.	07/26/97	R12056	R12056	07249704P
CHROMIUM	SW846 6010	16.0	45.8	81.4	222.	07/26/97	R12056	R12056	07249704P
COBALT	SW846 6010	40.1	BQL	38.1	95.1	07/26/97	R12056	R12056	07249704P
COPPER	SW846 6010	20.0	BQL	21.9	109.	07/26/97	R12056	R12056	07249704P
IRON	SW846 6010	80.2	5280	3810	-183	07/26/97	R12056	R12056	07249704P
LEAD	SW846 6010	40.1	5.25	43.6	95.7	07/26/97	R12056	R12056	07249704P
MAGNESIUM	SW846 6010	1600	770	2500	108.	07/26/97	R12056	R12056	07249704P
MANGANESE	SW846 6010	40.1	120	143	58.2	07/26/97	R12056	R12056	07249704P
NICKEL	SW846 6010	40.1	6.82	42.8	89.8	07/26/97	R12056	R12056	07249704P
POTASSIUM	SW846 6010	1600	729	2900	135.	07/26/97	R12056	R12056	07249704P
SELENIUM	SW846 6010	160	BQL	162	101.	07/26/97	R12056	R12056	07249704P
LIVER	SW846 6010	4.01	BQL	3.95	98.6	07/26/97	R12056	R12056	07249704P
DIUM	SW846 6010	1600	BQL	1880	117.	07/26/97	R12056	R12056	07249704P
THALLIUM	SW846 6010	160	BQL	156	97.6	07/26/97	R12056	R12056	07249704P
VANADIUM	SW846 6010	40.1	7.83	44.5	91.4	07/26/97	R12056	R12056	07249704P
ZINC	SW846 6010	40.1	27.6	66.4	96.8	07/26/97	R12056	R12056	07249704P

$$\%R = ((SSR - SR) / SA) * 100$$

Control Limits: 75-125%

Corresponding Samples:

970727504, 970727505, 970727506, 970740103, 970740104, 970740105,  
 970740301, 970740302, 970740303, 970740304, 970740305, 970740306,  
 970740307, 970740308, 970740309, 970740310, 970740311, 970740312,  
 970740313, 970740314, 970742309, 970742310, 970742411, 970742602

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
Level 2 Metals Results Report  
SPIKE RESULTS

IEA Project #: 2436\_001  
IEA Sample #: 970740302  
Matrix: SOIL

Parameter	Method	Spike Results (mg/kg)				Date Analyzed	Samp Run	Spike Run	Prep Batch
		SA	SR	SSR	%RCY				
CHROMIUM	SW846 6010	15.0	57.3	55.1	-14.	07/29/97	R12092	R12092	07289704P
IRON	SW846 6010	75.2	13500	13000	-618	07/29/97	R12092	R12092	07289704P

$\%R = ((SSR - SR) / SA) * 100$  Control Limits: 75-125%

Corresponding Samples:  
970740302, 970740306, 970740307, 970740311, 970740312

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
Level 2 Metals Results Report  
SPIKE RESULTS

IEA Project #: 2436\_001  
IEA Sample #: 970753201  
Matrix: SOIL

Spike Results (mg/kg)

Parameter	Method	SA	SR	SSR	%RCY	Date Analyzed	Samp Run	Spike Run	Prep Batch
MERCURY	SW846 7471	0.153	BQL	0.163	107.	07/30/97	R12112	R12112	07299701H

$\%R = ((SSR - SR) / SA) * 100$  Control Limits: 75-125%

Corresponding Samples:

970724101, 970724102, 970724103, 970724104, 970724105, 970724106,  
970724107, 970740301, 970740302, 970740303, 970740304, 970740305,  
970740306, 970740307, 970740308, 970740309, 970740310, 970740311,  
970740312, 970740313, 970740314, 970743801, 970743802, 970743803,  
970743804, 970743805, 970743806, 970745501, 970745502, 970746901,  
970746902, 970746903, 970746904, 970746905, 970746906, 970746907,  
970746908, 970746909, 970747101, 970747102, 970747103, 970747104,  
970747105, 970747106, 970747107, 970747108, 970752001, 970752002,  
970752003, 970752004, 970753201, 970753301, 970753302, 970753303,  
970753304, 970754001, 970754002, 970754003, 970754004, 970754005

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
 Level 2 Metals Results Report  
 SPIKE DUPLICATE RESULTS

IEA Project #: 2436\_001  
 IEA Sample #: 970727504S  
 Matrix: SOIL

Parameter	Method	Spike Duplicate Results						
		Sample (mg/kg)	Duplicate (mg/kg)	RPD %	Date Analyzed	Samp Run	Dup Run	Prep Batch
ALUMINUM	SW846 6010	4440	4080	8.60	07/26/97	R12056	R12056	07249704P
ANTIMONY	SW846 6010	24.8	33.6	30.0	07/26/97	R12056	R12056	07249704P
ARSENIC	SW846 6010	158	185	15.8	07/26/97	R12056	R12056	07249704P
BARIUM	SW846 6010	157	186	16.6	07/26/97	R12056	R12056	07249704P
BERYLLIUM	SW846 6010	4.00	4.80	18.2	07/26/97	R12056	R12056	07249704P
CADMIUM	SW846 6010	3.93	4.68	17.5	07/26/97	R12056	R12056	07249704P
CALCIUM	SW846 6010	43200	27700	43.5	07/26/97	R12056	R12056	07249704P
CHROMIUM	SW846 6010	81.4	55.2	38.3	07/26/97	R12056	R12056	07249704P
COBALT	SW846 6010	38.1	44.8	16.1	07/26/97	R12056	R12056	07249704P
COPPER	SW846 6010	21.9	25.0	13.3	07/26/97	R12056	R12056	07249704P
IRON	SW846 6010	3810	3490	8.87	07/26/97	R12056	R12056	07249704P
LEAD	SW846 6010	43.6	50.1	13.7	07/26/97	R12056	R12056	07249704P
MAGNESIUM	SW846 6010	2500	2410	3.82	07/26/97	R12056	R12056	07249704P
MANGANESE	SW846 6010	143	145	1.24	07/26/97	R12056	R12056	07249704P
NICKEL	SW846 6010	42.8	49.5	14.5	07/26/97	R12056	R12056	07249704P
POTASSIUM	SW846 6010	2900	2880	0.62	07/26/97	R12056	R12056	07249704P
SELENIUM	SW846 6010	162	188	14.6	07/26/97	R12056	R12056	07249704P
LIVER	SW846 6010	3.95	4.59	14.8	07/26/97	R12056	R12056	07249704P
DIUM	SW846 6010	1880	2110	11.1	07/26/97	R12056	R12056	07249704P
THALLIUM	SW846 6010	156	183	15.7	07/26/97	R12056	R12056	07249704P
VANADIUM	SW846 6010	44.5	50.3	12.2	07/26/97	R12056	R12056	07249704P
ZINC	SW846 6010	66.4	72.2	8.39	07/26/97	R12056	R12056	07249704P

$$RPD = \frac{S-D}{(S+D)/2} \times 100 \quad \text{Control Limits: } +/- 20\%$$

Corresponding Samples:

970727504, 970727505, 970727506, 970740103, 970740104, 970740105,  
 970740301, 970740302, 970740303, 970740304, 970740305, 970740306,  
 970740307, 970740308, 970740309, 970740310, 970740311, 970740312,  
 970740313, 970740314, 970742309, 970742310, 970742411, 970742602

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
Level 2 Metals Results Report  
SPIKE DUPLICATE RESULTS

IEA Project #: 2436\_001

IEA Sample #: 970740302S

Matrix: SOIL

Parameter	Method	Spike Duplicate Results						Prep Batch
		Sample (mg/kg)	Duplicate (mg/kg)	RPD %	Date Analyzed	Samp Run	Dup Run	
CHROMIUM	SW846 6010	55.1	67.9	20.8	07/29/97	R12092	R12092	07289704P
IRON	SW846 6010	13000	8370	43.8	07/29/97	R12092	R12092	07289704P

S-D

$$RPD = \frac{S-D}{(S+D)/2} \times 100$$

Control Limits: +/- 20%

Corresponding Samples:

970740302, 970740306, 970740307, 970740311, 970740312

Comments:

Industrial & Environmental Analysts, Inc. (IEA)  
Level 2 Metals Results Report  
SPIKE DUPLICATE RESULTS

IEA Project #: 2436\_001  
IEA Sample #: 970753201S  
Matrix: SOIL

Parameter	Method	Spike Duplicate Results						Prep Batch
		Sample (mg/kg)	Duplicate (mg/kg)	RPD %	Date Analyzed	Samp Run	Dup Run	
MERCURY	SW846 7471	0.163	0.195	17.7	07/30/97	R12112	R12112	07299701H

$$\text{RPD} = \frac{\text{S-D}}{(\text{S+D})/2} \times 100 \quad \text{Control Limits: } +/- 20\%$$

Corresponding Samples:

970724101, 970724102, 970724103, 970724104, 970724105, 970724106,  
970724107, 970740301, 970740302, 970740303, 970740304, 970740305,  
970740306, 970740307, 970740308, 970740309, 970740310, 970740311,  
970740312, 970740313, 970740314, 970743801, 970743802, 970743803,  
970743804, 970743805, 970743806, 970745501, 970745502, 970746901,  
970746902, 970746903, 970746904, 970746905, 970746906, 970746907,  
970746908, 970746909, 970747101, 970747102, 970747103, 970747104,  
970747105, 970747106, 970747107, 970747108, 970752001, 970752002,  
970752003, 970752004, 970753201, 970753301, 970753302, 970753303,  
970753304, 970754001, 970754002, 970754003, 970754004, 970754005

Comments:



**IEA**  
An Aquarion Company

3000 WESTON PKWY.  
CARY, N.C. 27513  
PH # 919-677-0090  
FAX # 919-677-0427

# CHAIN OF CUSTODY RECORD

NO. 33643

## REGULATORY CLASSIFICATION - PLEASE SPECIFY

NPDES    DRINKING WATER    RCRA    OTHER \_\_\_\_\_

STATE CERT. SPECIFY \_\_\_\_\_

Page 1 of 1

### COMPANY/LOCATION

Focus Environmental, Inc.  
Knoxville, TN

### PROJECT #

### PROJECT NAME

11603

American Chemical Services Site

### SAMPLERS: (PLEASE PRINT)

### SIGNATURE

Paul Carlson  
Tina Carlson

Tina Carlson

### SAMPLE I.D. ( 26 CHARACTER MAXIMUM )

### DATE

### TIME

### COMP

### GRAB

# OF CONTAINERS	MATRIX		
	SOIL	WATER	OTHER

### REQUESTED PARAMETERS

SA04-0-IEA-01	7/17			3	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SA04-0-IEA-02	7/17			3	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SA02-0-IEA-01	7/17			2	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SA02-0-IEA-02	7/17			2	X	X	X	X	X	X	X	X	X	X	X	X	X	X

(These are all non-refrigerated samples)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME	IEA QUOTE NO.	IEA PROJECT NO.
Paul Carlson	7/19	AM				W9707359	2416-001
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME	PROJECT MANAGER (PLEASE PRINT)	P.O. NO.
			Susan Carlson	7/19	10:15		

REMARKS ON SAMPLE RECEIPT		IEA REMARKS	FIELD REMARKS / COMMENTS
<input checked="" type="checkbox"/> BOTTLE INTACT	<input type="checkbox"/> CUSTODY SEALS	RECEIPT TEMPERATURE 42° F	where 3 containers are indicated there will be 2, 7, 2, 1, 1, 2 jugs and 1 bag. 2 containers are indicated: 1, 4 & 2 jgs, 1, 1, 2 jgs. 3 Thompson containers & 1 tall can in this box

- PRESERVED
- SEALS INTACT
- CHILLED
- SEE REMARKS

## **APPENDIX G**

### **ANALYTICAL DATA PACKAGE GAILBRAITH LABORATORIES**



# GALBRAITH® LABORATORIES, INC.

Accuracy with speed - since 1950

## LABORATORY REPORT

Twila Carlson  
Focus Environmental Inc  
9050 Executive Park Drive Suite A202  
Knoxville TN 37923

FINAL REPORT  
Date Amended: 8/15/97  
Sample Received: 7/22/97  
Original Report Date: 8/13/97  
Fax: 531-8854

SAMPLE ID	LAB ID	ANALYSIS	AS RECEIVED	DRY BASIS
-----------	--------	----------	-------------	-----------

### ULTIMATE ANALYSIS:

SA02-O-GAL-01	U-7003	Karl Fischer Water	40.36	%
		Carbon	22.40	%
		Hydrogen	6.80 ***	%
		Nitrogen	0.67	%
		Sulfur	<0.5 *	%
		Chlorine	1.26	%
		Ash	1.30	%
		Oxygen (by difference)	27.21 ***	%
		Volatile Matter	90.29	%
		HHV	5444	BTU/lb
SA02-O-GAL-02	U-7004	Karl Fischer Water	5.75	%
		Carbon	70.34	%
		Hydrogen	9.72 ***	%
		Nitrogen	<0.5 *	%
		Sulfur	0.25	%
		Chlorine	1.04	%
		Ash	1.58	%
		Oxygen (by difference)	11.32 ***	%
		Volatile Matter	96.67	%
		HHV	16672	BTU/lb



# GALBRAITH<sup>®</sup> LABORATORIES, INC.

Accuracy with speed - since 1950

## LABORATORY REPORT

Twila Carlson

SAMPLE ID	LAB ID	ANALYSIS	AS RECEIVED	DRY BASIS
-----------	--------	----------	-------------	-----------

### ULTIMATE ANALYSIS:

SA04-O-GAL-01	U-7005	Karl Fischer Water	0.59	%
		Carbon	78.71	%
		Hydrogen	10.73 ***	%
		Nitrogen	<0.5 *	%
		Sulfur	0.17	%
		Chlorine	3.72	%
		Ash	0.70	%
		Oxygen (by difference)	5.38 ***	%
		Volatile Matter	95.50	%
		HHV	16602	BTU/lb
SA04-O-GAL-02	U-7006	Karl Fischer Water	49.40	%
		Carbon	30.88	%
		Hydrogen	5.39 ***	%
		Nitrogen	<0.5 *	%
		Sulfur	0.070	%
		Chlorine	242	ppm
		Ash	0.04	%
		Oxygen (by difference)	14.20 ***	%
		Volatile Matter	93.91	%
		HHV	5714	BTU/lb





# GALBRAITH® LABORATORIES, INC.

Accuracy with speed - since 1950

## LABORATORY REPORT

Twila Carlson

SAMPLE ID	LAB ID	ANALYSIS	AS RECEIVED	DRY BASIS
-----------	--------	----------	-------------	-----------

### ULTIMATE ANALYSIS:

KP01-S-GAL	U-7007	Loss on Drying	19.63 **	%
		Karl Fischer Water	15.83	%
		Carbon	3.79	%
		Hydrogen	1.09 ***	%
		Nitrogen	<0.5 *	%
		Sulfur	0.21	%
		Chlorine	36	ppm
		Ash	74.38	%
		Oxygen (by difference)	4.70 ***	%
	U-9879	Volatile Matter @ 550° C	23.57	%
		Volatile Matter	25.62	%
		HHV	408	BTU/lb
D02-S-GAL	U-7008	Loss on Drying	14.17 **	%
		Karl Fischer Water	10.98	%
		Carbon	2.53	%
		Hydrogen	0.00 ***	%
		Nitrogen	<0.5 *	%
		Sulfur	0.11	%
		Chlorine	290	ppm
		Ash	76.67	%
		Oxygen (by difference)	9.68 ***	%
	U-9880	Volatile Matter @ 550° C	17.25	%
		Volatile Matter	22.89	%
		HHV	286	BTU/lb



# GALBRAITH® LABORATORIES, INC.

Accuracy with speed - since 1950

## LABORATORY REPORT

Twila Carlson

SAMPLE ID	LAB ID	ANALYSIS	AS RECEIVED	DRY BASIS
-----------	--------	----------	-------------	-----------

### ULTIMATE ANALYSIS:

SA02-S-GAL	U-7009	Loss on Drying	21.14 **	%
		Karl Fischer Water	12.53	%
		Carbon	8.82	%
		Hydrogen	2.96 ***	%
		Nitrogen	<0.5 *	%
		Sulfur	0.091	%
		Chlorine	0.29	%
		Ash	70.47	%
		Oxygen (by difference)	4.84 ***	%
		Volatile Matter @ 550° C	24.53	%
U-9881	U-9881	Volatile Matter	28.33	%
		HHV	1666	BTU/lb
		Loss on Drying	17.98 **	%
		Karl Fischer Water	15.45	%
SA04-S-GAL	U-7010	Carbon	5.30	%
		Hydrogen	0.17 ***	%
		Nitrogen	<0.5 *	%
		Sulfur	0.072	%
		Chlorine	0.17	%
		Ash	74.97	%
		Oxygen (by difference)	3.87 ***	%
		Volatile Matter @ 550° C	21.12	%
		Volatile Matter	24.90	%
		HHV	952	BTU/lb





# GALBRAITH® LABORATORIES, INC.

Accuracy with speed - since 1950

## LABORATORY REPORT

Twila Carlson

SAMPLE ID	LAB ID	ANALYSIS	AS RECEIVED	DRY BASIS
-----------	--------	----------	-------------	-----------

### ULTIMATE ANALYSIS:

D01-S-GAL	U-7011	Loss on Drying	16.27 **	%
		Karl Fischer Water	14.35	%
		Carbon	4.28	%
		Hydrogen	0.82 ***	%
		Nitrogen	<0.5 *	%
		Sulfur	0.098	%
		Chlorine	350	ppm
		Ash	69.40	%
		Oxygen (by difference)	11.02 ***	%
	U-9883	Volatile Matter @ 550° C	24.96	%
		Volatile Matter	30.44	%
		HHV	698	BTU/lb
SP01-S-GAL	U-7012	Loss on Drying	16.00 **	%
		Karl Fischer Water	17.09	%
		Carbon	4.49	%
		Hydrogen	0.00 ***	%
		Nitrogen	<0.5 *	%
		Sulfur	0.088	%
		Chlorine	0.11	%
		Ash	75.55	%
		Oxygen (by difference)	2.67 ***	%
	U-9884	Volatile Matter @ 550° C	22.16	%
		Volatile Matter	24.10	%
		HHV	844	BTU/lb





# GALBRAITH® LABORATORIES, INC.

Accuracy with speed - since 1950

## LABORATORY REPORT

Twila Carlson

SAMPLE ID	LAB ID	ANALYSIS	AS RECEIVED	DRY BASIS
-----------	--------	----------	-------------	-----------

### ULTIMATE ANALYSIS:

SP02-S-GAL	U-7013	Loss on Drying	18.26 **	%
		Karl Fischer Water	12.01	%
		Carbon	6.18	%
		Hydrogen	1.06 ***	%
		Nitrogen	<0.5 *	%
		Sulfur	0.11	%
		Chlorine	0.48	%
		Ash	67.22	%
		Oxygen (by difference)	12.94 ***	%
	U-9885	Volatile Matter @ 550° C	27.48	%
		Volatile Matter	31.78	%
		HHV	2105	BTU/lb

Note: Due to the matrix of your sample, we were unable to perform the Proximate Analysis for these samples. If you need further assistance, please contact Technical Service at 423-456-1335.

\* Quality assurance data indicates that we cannot be confident in the analysis of your sample below the level indicated. If lower quantitation limits are required, other procedures may be applicable. Check with our technical personnel.

\*\* Added per telephone call 8/14/97. Please note that the result may contain some volatile matter.

\*\*\* Hydrogen and Oxygen corrected for Hydrogen and Oxygen due to water determined by Karl Fischer.

WML:sc





3600 WESTON PKWY.  
CARY, N.C. 27513  
PH # 919-677-0090  
FAX # 919-677-0427

## CHAIN OF CUSTODY RECORD

4-7002-7013

NO. 83644

## COMPANY/LOCATION

Focus Environmental  
Knoxville, TN

## REGULATORY CLASSIFICATION - PLEASE SPECIFY

- NPDES    DRINKING WATER    RCRA    OTHER \_\_\_\_\_  
 STATE CERT. SPECIFY \_\_\_\_\_

JUL 22 1997

Page 1 of 1

PROJECT #	PROJECT NAME	# OF CONTAINERS	MATRIX	REQUESTED PARAMETERS						
				SOIL	WATER	OTHER	Organic Liquid	Inorganic / Pesticides	Heavy Metals	Karl Fischer Moisture
119603	American Chemical Services Site									
SAMPLERS: (PLEASE PRINT)		SIGNATURE								
Paul Sadler Twila Carlson	Twila Carlson									
SAMPLE I.D. ( 26 CHARACTER MAXIMUM )	DATE	TIME	COMP	GRAB						
SA02-O-GAL-01	7/17				1		X	X	X	
SA02-O-GAL-02	7/17				1		X	X	X	
SA04-O-GAL-01	7/17				1		X	X	X	
SA04-O-GAL-02	7/17				1		X	X	X	
KP01-S-GAL	7/17				1	X		X	X	
O2-S-GAL	7/17				1	X		X	X	
SA02-S-GAL	7/17				1	X		X	X	
SA04-S-GAL	7/17				1	X		X	X	
DO1-S-GAL	7/17				1	X		X	X	
SP01-S-GAL	7/18				1	X		X	X	
SP02-S-GAL	7/18				1	X		X	X	
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY		DATE	TIME	IEA QUOTE NO.		IEA PROJECT NO.	
Twila Carlson	7/19	AM	<i>J. L. L.</i>		7/21/97	16:20				
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY		DATE	TIME	PROJECT MANAGER (PLEASE PRINT)		P.O. NO.	
REMARKS ON SAMPLE RECEIPT		IEA REMARKS					FIELD REMARKS / COMMENTS			
<input type="checkbox"/> BOTTLE INTACT <input type="checkbox"/> CUSTODY SEALS <input type="checkbox"/> PRESERVED <input type="checkbox"/> SEALS INTACT <input type="checkbox"/> CHILLED <input type="checkbox"/> SEE REMARKS		RECEIPT TEMPERATURE=					Samples were packed in 3 separate shipping containers. All samples are 8oz jars.			

**APPENDIX H**

**COMPARISON OF SOIL ANALYTICAL RESULTS  
TO CLEANUP GOALS**

## Compliance Calculation - Soil Sample from Test Pit D01

<u>Carcinogenic Contaminants</u>	<u>Cleanup Goal (mg/kg)</u>	<u>Measured Concentration (mg/kg)</u>	<u>Cleanup Goal Met?</u>
<b>Volatiles</b>			
Benzene	1		
Carbon Tetrachloride	0.38		
Chloroform	9.5		
1,2-Dichloroethane	0.64		
1,1-Dichloroethene	0.098		
1,2-Dichloropropane	0.42		
Methylene Chloride	6.2		
Styrene	1.7		
1,1,2,2-Tetrachloroethane	0.28		
Tetrachloroethene	1.1	3.7	NO
1,1,2-Trichloroethane	0.51		
Trichloroethene	5.3		
Vinyl Chloride	0.031		
Total Carcinogenic Volatiles	4		
<b>Semivolatiles</b>			
CPAHs	0.0026		
Cyclic Ketones	7.3		
bis(2-Ethylhexyl)phthalate	1.1	120	NO
Isophorone	7.2	67	NO
Pentachlorophenol	0.43		
2,4-Dinitrotoluene	0.044		
bis(2-Chloroethyl)ether	0.027		
Hexachlorobutadiene	0.36		
Hexachlorobenzene	0.018		
n-Nitrosodiphenylamine	12		
2,6-Dinitrotoluene	0.044		
1,4-Dichlorobenzene	2.4		
<b>Pesticides/PCBs</b>			
alpha-BHC	0.0047		
Heptachlor Epoxide	0.0033		
Aldrin	0.002		
4,4'-DDD	0.12		
4,4'-DDT	0.088		
gamma-BHC (Lindane)	0.046		
beta-BHC	0.016		
4,4'-DDE	0.16		
PCBs (b)	10	28	NO

**Notes:**

- a) Risk Index (RI) is the ratio of the measured concentration to the concentration that represents a  $1 \times 10^{-6}$  risk. The RIs must be less than 1.0. Nondetects will not be considered in the calculations.
- b) PCB is not included in the CRI calculation. Concentrations must be less than 10 mg/kg to leave in place and less than 2 mg/kg in treated materials for backfill.

## Compliance Calculation - Soil Sample from Test Pit D01

<u>Noncarcinogenic Contaminant</u>	Cleanup Goal (mg/kg)	Measured Concentration (mg/kg)	Hazard Index
<b>Volatiles</b>			
Acetone	2,400		0.00
2-Butanone	620		0.00
Chlorobenzene	150		0.00
Chloroethane	2,700		0.00
1,2-Dichloroethene (cis)	250		0.00
Ethylbenzene	1,300	52	0.04
4-Methyl-2-pentanone	630	15	0.02
Toluene	5,000	67	0.01
1,1,1-Trichloroethane	2,300		0.00
Xylenes (mixed)	26,000	320	0.01
Total Noncarcinogenic Volatiles		454	
<b>Semivolatiles</b>			
Naphthalene	82	51	0.62
Di-n-butylphthalate	2,300	79	0.03
1,2,4-Trichlorobenzene	16		0.00
<b>Pesticides/PCBs</b>			
Endosulfan I	0.63		0.00
<b>Metals</b>			
Antimony	15	164	10.93
Cadmium	51	106	2.08
Barium	2,600	2,690	1.03
Chromium (VI)	1,400	1,480	1.06
<b>Miscellaneous Groups</b>			
<b>Nitrogenated Benzenes</b>	6.2		0.00
<b>n-Chain Alkanes</b>	760		0.00
<b>Branched Alkanes</b>	770		0.00
<b>Methyl Propyl Benzenes</b>	490		0.00
<b>Halogenated Alkanes</b>	2,300		0.00
<b>Dimethyl Ethyl Benzenes</b>	1,300		0.00
<b>Non-Cyclic Acids</b>	1,000		0.00
<b>Methylated Naphthalenes</b>	85		0.00
<b>Oxygenated Benzenes</b>	1,200		0.00
<b>Diethyl Benzenes</b>	1,300		0.00
<b>Propenyl Benzenes</b>	320		0.00
<b>Ethyl Methyl Benzenes</b>	4,900		0.00
<b>Cumulative Hazard Index (CHI) (a)</b>			15.85
Total Volatiles	458	mg/kg	
Classification (b)	<b>Waste</b>		

**Notes :**

- a) Hazard Index is the ratio of the measured concentration to the Final remediation Level. The cumulative hazard index (CHI) is the sum of the hazard indexes for all noncarcinogenic contaminants of concern and must be less than 1.0. Nondetects will not be considered in the calculation of the CHI.
- b) If PCBs are greater than 10 mg/kg and Total Volatiles are greater than 10,000 mg/kg, then the soil is classified as a "Waste". Otherwise, if any of the carcinogenic contaminants exceed their cleanup goals or the CHI exceeds 1, the soil is classified as a contaminated soil. All other soils are classified as "Clean".

## Compliance Calculation - Soil Sample from Test Pit D02

<b>Carcinogenic Contaminants</b>	<b>Cleanup Goal (mg/kg)</b>	<b>Measured Concentration (mg/kg)</b>	<b>Cleanup Goal Met?</b>
<b>Volatiles</b>			
Benzene	1		
Carbon Tetrachloride	0.38		
Chloroform	9.5		
1,2-Dichloroethane	0.64		
1,1-Dichloroethene	0.098		
1,2-Dichloropropane	0.42		
Methylene Chloride	6.2		
Styrene	1.7		
1,1,2,2-Tetrachloroethane	0.28		
Tetrachloroethene	1.1		
1,1,2-Trichloroethane	0.51		
Trichloroethene	5.3		
Vinyl Chloride	0.031		
Total Carcinogenic Volatiles		0	
<b>Semivolatiles</b>			
CPAHs	0.0026		
Cyclic Ketones	7.3		
bis(2-Ethylhexyl)phthalate	1.1	55	NO
Isophorone	7.2		
Pentachlorophenol	0.43		
2,4-Dinitrotoluene	0.044		
bis(2-Chloroethyl)ether	0.027		
Hexachlorobutadiene	0.36		
Hexachlorobenzene	0.018		
n-Nitrosodiphenylamine	12		
2,6-Dinitrotoluene	0.044		
1,4-Dichlorobenzene	2.4		
<b>Pesticides/PCBs</b>			
alpha-BHC	0.0047		
Heptachlor Epoxide	0.0033		
Aldrin	0.002		
4,4'-DDD	0.12		
4,4'-DDT	0.088		
gamma-BHC (Lindane)	0.046		
beta-BHC	0.016		
4,4'-DDE	0.16		
PCBs (b)	10	20	NO

**Notes:**

- a) Risk Index (RI) is the ratio of the measured concentration to the concentration that represents a  $1 \times 10^{-6}$  risk. The RI's must be less than 1.0. Nondetects will not be considered in the calculations.
- b) PCB is not included in the CRI calculation. Concentrations must be less than 10 mg/kg to leave in place and less than 2 mg/kg in treated materials for backfill.

## Compliance Calculation - Soil Sample from Test Pit D02

<u>Noncarcinogenic Contaminant</u>	<u>Cleanup Goal (mg/kg)</u>	<u>Measured Concentration (mg/kg)</u>	<u>Hazard Index</u>
<b>Volatiles</b>			
Acetone	2,400		0.00
2-Butanone	620		0.00
Chlorobenzene	150		0.00
Chloroethane	2,700		0.00
1,2-Dichloroethene (cis)	250		0.00
Ethylbenzene	1,300	19	0.01
4-Methyl-2-pentanone	630		0.00
Toluene	5,000	21	0.00
1,1,1-Trichloroethane	2,300		0.00
Xylenes (mixed)	26,000	100	0.00
Total Noncarcinogenic Volatiles	140		
<b>Semivolatiles</b>			
Naphthalene	82	16	0.20
Di-n-butylphthalate	2,300	11	0.00
1,2,4-Trichlorobenzene	16		0.00
<b>Pesticides/PCBs</b>			
Endosulfan I	0.63		0.00
<b>Metals</b>			
Antimony	15		0.00
Cadmium	51	8	0.16
Barium	2,600	222	0.09
Chromium (VI)	1,400	111	0.08
<b>Miscellaneous Groups</b>			
Nitrogenated Benzenes	6.2		0.00
n-Chain Alkanes	760		0.00
Branched Alkanes	770		0.00
Methyl Propyl Benzenes	490		0.00
Halogenated Alkanes	2,300		0.00
Dimethyl Ethyl Benzenes	1,300		0.00
Non-Cyclic Acids	1,000		0.00
Methylated Naphthalenes	85		0.00
Oxygenated Benzenes	1,200		0.00
Diethyl Benzenes	1,300		0.00
Propenyl Benzenes	320		0.00
Ethyl Methyl Benzenes	4,900		0.00
<b>Cumulative Hazard Index (CHI) (a)</b>			<b>0.54</b>
Total Volatiles	140	mg/kg	
Classification (b)	<b>Waste</b>		

**Notes :**

- a) Hazard Index is the ratio of the measured concentration to the Final remediation Level. The cumulative hazard index (CHI) is the sum of the hazard indexes for all noncarcinogenic contaminants of concern and must be less than 1.0. Nondetects will not be considered in the calculation of the CHI.
- b) If PCBs are greater than 10 mg/kg and Total Volatiles are greater than 10,000 mg/kg, then the soil is classified as a "Waste". Otherwise, if any of the carcinogenic contaminants exceed their cleanup goals or the CHI exceeds 1, the soil is classified as a contaminated soil. All other soils are classified as "Clean".

## Compliance Calculation - Soil Sample from Test Pit KP01

<u>Carcinogenic Contaminants</u>	<u>Cleanup Goal (mg/kg)</u>	<u>Measured Concentration (mg/kg)</u>	<u>Cleanup Goal Met?</u>
<b>Volatiles</b>			
Benzene	1		
Carbon Tetrachloride	0.38		
Chloroform	9.5		
1,2-Dichloroethane	0.64		
1,1-Dichloroethene	0.098		
1,2-Dichloropropane	0.42		
Methylene Chloride	6.2		
Styrene	1.7		
1,1,2,2-Tetrachloroethane	0.28		
Tetrachloroethene	1.1		
1,1,2-Trichloroethane	0.51		
Trichloroethene	5.3		
Vinyl Chloride	0.031		
Total Carcinogenic Volatiles		0	
<b>Semivolatiles</b>			
CPAHs	0.0026		
<b>Cyclic Ketones</b>			
bis(2-Ethylhexyl)phthalate	1.1	130	NO
Isophorone	7.2		
Pentachlorophenol	0.43		
2,4-Dinitrotoluene	0.044		
bis(2-Chloroethyl)ether	0.027		
Hexachlorobutadiene	0.36		
Hexachlorobenzene	0.018		
n-Nitrosodiphenylamine	12		
2,6-Dinitrotoluene	0.044		
1,4-Dichlorobenzene	2.4		
<b>Pesticides/PCBs</b>			
alpha-BHC	0.0047		
Heptachlor Epoxide	0.0033		
Aldrin	0.002		
4,4'-DDD	0.12		
4,4'-DDT	0.088		
gamma-BHC (Lindane)	0.046		
beta-BHC	0.016		
4,4'-DDE	0.16		
PCBs (b)	10	127	NO

**Notes:**

- a) Risk Index (RI) is the ratio of the measured concentration to the concentration that represents a  $1 \times 10^{-6}$  risk  
The RI's must be less than 1.0. Nondetects will not be considered in the calculations.
- b) PCB is not included in the CRI calculation. Concentrations must be less than 10 mg/kg to leave in place and less than 2 mg/kg in treated materials for backfill.

## Compliance Calculation - Soil Sample from Test Pit KP01

<u>Noncarcinogenic Contaminant</u>	<u>Cleanup Goal (mg/kg)</u>	<u>Measured Concentration (mg/kg)</u>	<u>Hazard Index</u>
<b>Volatiles</b>			
Acetone	2,400		0.00
2-Butanone	620		0.00
Chlorobenzene	150		0.00
Chloroethane	2,700		0.00
1,2-Dichloroethene (cis)	250		0.00
Ethylbenzene	1,300		0.00
4-Methyl-2-pentanone	630		0.00
Toluene	5,000	3	0.00
1,1,1-Trichloroethane	2,300		0.00
Xylenes (mixed)	26,000	62	0.00
Total Noncarcinogenic Volatiles	65		
<b>Semivolatiles</b>			
Naphthalene	82		0.00
Di-n-butylphthalate	2,300		0.00
1,2,4-Trichlorobenzene	16		0.00
<b>Pesticides/PCBs</b>			
Endosulfan I	0.63		0.00
<b>Metals</b>			
Antimony	15		0.00
Cadmium	51	11	0.22
Barium	2,600	232	0.09
Chromium (VI)	1,400	161	0.12
<b>Miscellaneous Groups</b>			
Nitrogenated Benzenes	6.2		0.00
n-Chain Alkanes	760		0.00
Branched Alkanes	770		0.00
Methyl Propyl Benzenes	490		0.00
Halogenated Alkanes	2,300		0.00
Dimethyl Ethyl Benzenes	1,300		0.00
Non-Cyclic Acids	1,000		0.00
Methylated Naphthalenes	85		0.00
Oxygenated Benzenes	1,200		0.00
Diethyl Benzenes	1,300		0.00
Propenyl Benzenes	320		0.00
Ethyl Methyl Benzenes	4,900		0.00
<b>Cumulative Hazard Index (CHI) (a)</b>			0.42
Total Volatiles	65	mg/kg	
Classification (b)	Waste		

**Notes :**

- a) Hazard Index is the ratio of the measured concentration to the Final remediation Level. The cumulative hazard index (CHI) is the sum of the hazard indexes for all noncarcinogenic contaminants of concern and must be less than 1.0. Nondetects will not be considered in the calculation of the CHI.
- b) If PCBs are greater than 10 mg/kg and Total Volatiles are greater than 10,000 mg/kg, then the soil is classified as a "Waste". Otherwise, if any of the carcinogenic contaminants exceed their cleanup goals or the CHI exceeds 1, the soil is classified as a contaminated soil. All other soils are classified as "Clean".

## Compliance Calculation - Soil Sample from Test Pit SP01

<u>Carcinogenic Contaminants</u>	<u>Cleanup Goal (mg/kg)</u>	<u>Measured Concentration (mg/kg)</u>	<u>Cleanup Goal Met?</u>
<b>Volatiles</b>			
Benzene	1		
Carbon Tetrachloride	0.38		
Chloroform	9.5		
1,2-Dichloroethane	0.64		
1,1-Dichloroethene	0.098		
1,2-Dichloropropane	0.42		
Methylene Chloride	6.2		
Styrene	1.7		
1,1,2,2-Tetrachloroethane	0.28		
Tetrachloroethene	1.1	220.0	NO
1,1,2-Trichloroethane	0.51		
Trichloroethene	5.3		
Vinyl Chloride	0.031		
Total Carcinogenic Volatiles	220		
<b>Semivolatiles</b>			
CPAHs	0.0026		
<b>Cyclic Ketones</b>			
bis(2-Ethylhexyl)phthalate	7.3		
Isophorone	1.1	230	NO
Pentachlorophenol	7.2	190	NO
2,4-Dinitrotoluene	0.43		
bis(2-Chloroethyl)ether	0.044		
Hexachlorobutadiene	0.027		
Hexachlorobenzene	0.36		
n-Nitrosodiphenylamine	0.018		
2,6-Dinitrotoluene	12		
2,6-Dinitrotoluene	0.044		
1,4-Dichlorobenzene	2.4		
<b>Pesticides/PCBs</b>			
alpha-BHC	0.0047		
Heptachlor Epoxide	0.0033		
Aldrin	0.002		
4,4'-DDD	0.12		
4,4'-DDT	0.088		
gamma-BHC (Lindane)	0.046		
beta-BHC	0.016		
4,4'-DDE	0.16		
PCBs (b)	10	68	NO

**Notes:**

- a) Risk Index (RI) is the ratio of the measured concentration to the concentration that represents a  $1 \times 10^{-6}$  risk. The RI's must be less than 1.0. Nondetects will not be considered in the calculations.
- b) PCB is not included in the CRI calculation. Concentrations must be less than 10 mg/kg to leave in place and less than 2 mg/kg in treated materials for backfill.

## Compliance Calculation - Soil Sample from Test Pit SP01

<u>Noncarcinogenic Contaminant</u>	<u>Cleanup Goal (mg/kg)</u>	<u>Measured Concentration (mg/kg)</u>	<u>Hazard Index</u>
<b>Volatiles</b>			
Acetone	2,400		0.00
2-Butanone	620		0.00
Chlorobenzene	150		0.00
Chloroethane	2,700		0.00
1,2-Dichloroethene (cis)	250		0.00
Ethylbenzene	1,300	710	0.55
4-Methyl-2-pentanone	630	410	0.65
Toluene	5,000	960	0.19
1,1,1-Trichloroethane	2,300		0.00
Xylenes (mixed)	26,000	5,000	0.19
Total Noncarcinogenic Volatiles		7,080	
<b>Semivolatiles</b>			
Naphthalene	82	74	0.90
Di-n-butylphthalate	2,300	82	0.04
1,2,4-Trichlorobenzene	16		0.00
<b>Pesticides/PCBs</b>			
Endosulfan I	0.63		0.00
<b>Metals</b>			
Antimony	15	16	1.07
Cadmium	51	21	0.41
Barium	2,600	282	0.11
Chromium (VI)	1,400	225	0.16
<b>Miscellaneous Groups</b>			
Nitrogenated Benzenes	6.2		0.00
n-Chain Alkanes	760		0.00
Branched Alkanes	770		0.00
Methyl Propyl Benzenes	490		0.00
Halogenated Alkanes	2,300		0.00
Dimethyl Ethyl Benzenes	1,300		0.00
Non-Cyclic Acids	1,000		0.00
Methylated Naphthalenes	85		0.00
Oxygenated Benzenes	1,200		0.00
Diethyl Benzenes	1,300		0.00
Propenyl Benzenes	320		0.00
Ethyl Methyl Benzenes	4,900		0.00
<b>Cumulative Hazard Index (CHI) (a)</b>			4.27
Total Volatiles	7,300	mg/kg	
Classification (b)	<b>Waste</b>		

**Notes :**

- a) Hazard Index is the ratio of the measured concentration to the Final remediation Level. The cumulative hazard index (CHI) is the sum of the hazard indexes for all noncarcinogenic contaminants of concern and must be less than 1.0. Nondetects will not be considered in the calculation of the CHI.
- b) If PCBs are greater than 10 mg/kg and Total Volatiles are greater than 10,000 mg/kg, then the soil is classified as a "Waste". Otherwise, if any of the carcinogenic contaminants exceed their cleanup goals or the CHI exceeds 1, the soil is classified as a contaminated soil. All other soils are classified as "Clean".

## Compliance Calculation - Soil Sample from Test Pit SP02

<u>Carcinogenic Contaminants</u>	<u>Cleanup Goal (mg/kg)</u>	<u>Measured Concentration (mg/kg)</u>	<u>Cleanup Goal Met?</u>
<b>Volatiles</b>			
Benzene	1		
Carbon Tetrachloride	0.38		
Chloroform	9.5		
1,2-Dichloroethane	0.64		
1,1-Dichloroethene	0.098		
1,2-Dichloropropane	0.42		
Methylene Chloride	6.2		
Styrene	1.7		
1,1,2,2-Tetrachloroethane	0.28		
Tetrachloroethene	1.1	290.0	NO
1,1,2-Trichloroethane	0.51		
Trichloroethene	5.3		
Vinyl Chloride	0.031		
Total Carcinogenic Volatiles		290	
<b>Semivolatiles</b>			
CPAHs	0.0026		
Cyclic Ketones	7.3		
bis(2-Ethylhexyl)phthalate	1.1		
Isophorone	7.2		
Pentachlorophenol	0.43		
2,4-Dinitrotoluene	0.044		
bis(2-Chloroethyl)ether	0.027		
Hexachlorobutadiene	0.36		
Hexachlorobenzene	0.018		
n-Nitrosodiphenylamine	12		
2,6-Dinitrotoluene	0.044		
1,4-Dichlorobenzene	2.4		
<b>Pesticides/PCBs</b>			
alpha-BHC	0.0047		
Heptachlor Epoxide	0.0033		
Aldrin	0.002		
4,4'-DDD	0.12		
4,4'-DDT	0.088		
gamma-BHC (Lindane)	0.046		
beta-BHC	0.016		
4,4'-DDE	0.16		
PCBs (b)	10	73	NO

**Notes:**

- a) Risk Index (RI) is the ratio of the measured concentration to the concentration that represents a  $1 \times 10^{-6}$  risk. The RI's must be less than 1.0. Nondetects will not be considered in the calculations.
- b) PCB is not included in the CRI calculation. Concentrations must be less than 10 mg/kg to leave in place and less than 2 mg/kg in treated materials for backfill.

## Compliance Calculation - Soil Sample from Test Pit SP02

<u>Noncarcinogenic Contaminant</u>	Cleanup Goal (mg/kg)	Measured Concentration (mg/kg)	Hazard Index
<b>Volatiles</b>			
Acetone	2,400		0.00
2-Butanone	620	240	0.39
Chlorobenzene	150		0.00
Chloroethane	2,700		0.00
1,2-Dichloroethene (cis)	250		0.00
Ethylbenzene	1,300	830	0.64
4-Methyl-2-pentanone	630	500	0.79
Toluene	5,000	1,300	0.26
1,1,1-Trichloroethane	2,300		0.00
Xylenes (mixed)	26,000	5,500	0.21
Total Noncarcinogenic Volatiles		8,370	
<b>Semivolatiles</b>			
Naphthalene	82		0.00
Di-n-butylphthalate	2,300		0.00
1,2,4-Trichlorobenzene	16		0.00
<b>Pesticides/PCBs</b>			
Endosulfan I	0.63		0.00
<b>Metals</b>			
Antimony	15	29	1.93
Cadmium	51	32	0.63
Barium	2,600	417	0.16
Chromium (VI)	1,400	360	0.26
<b>Miscellaneous Groups</b>			
Nitrogenated Benzenes	6.2		0.00
n-Chain Alkanes	760		0.00
Branched Alkanes	770		0.00
Methyl Propyl Benzenes	490		0.00
Halogenated Alkanes	2,300		0.00
Dimethyl Ethyl Benzenes	1,300		0.00
Non-Cyclic Acids	1,000		0.00
Methylated Naphthalenes	85		0.00
Oxygenated Benzenes	1,200		0.00
Diethyl Benzenes	1,300		0.00
Propenyl Benzenes	320		0.00
Ethyl Methyl Benzenes	4,900		0.00
<b>Cumulative Hazard Index (CHI) (a)</b>			<b>5.27</b>
Total Volatiles	8,660 mg/kg		
Classification (b)	<b>Waste</b>		

**Notes :**

- a) Hazard Index is the ratio of the measured concentration to the Final remediation Level. The cumulative hazard index (CHI) is the sum of the hazard indexes for all noncarcinogenic contaminants of concern and must be less than 1.0. Nondetects will not be considered in the calculation of the CHI.
- b) If PCBs are greater than 10 mg/kg and Total Volatiles are greater than 10,000 mg/kg, then the soil is classified as a "Waste". Otherwise, if any of the carcinogenic contaminants exceed their cleanup goals or the CHI exceeds 1, the soil is classified as a contaminated soil. All other soils are classified as "Clean".

## Compliance Calculation - Soil Sample from Test Pit SA02

<u>Carcinogenic Contaminants</u>	<u>Cleanup Goal (mg/kg)</u>	<u>Measured Concentration (mg/kg)</u>	<u>Cleanup Goal Met?</u>
<b>Volatiles</b>			
Benzene	1		
Carbon Tetrachloride	0.38		
Chloroform	9.5		
1,2-Dichloroethane	0.64		
1,1-Dichloroethene	0.098		
1,2-Dichloropropane	0.42		
Methylene Chloride	6.2		
Styrene	1.7		
1,1,2,2-Tetrachloroethane	0.28		
Tetrachloroethene	1.1	170.0	NO
1,1,2-Trichloroethane	0.51		
Trichloroethene	5.3	160	NO
Vinyl Chloride	0.031		
Total Carcinogenic Volatiles		330	
<b>Semivolatiles</b>			
CPAHs	0.0026		
<b>Cyclic Ketones</b>			
bis(2-Ethylhexyl)phthalate	1.1	240	NO
Isophorone	7.2	210	NO
Pentachlorophenol	0.43		
2,4-Dinitrotoluene	0.044		
bis(2-Chloroethyl)ether	0.027		
Hexachlorobutadiene	0.36		
Hexachlorobenzene	0.018		
n-Nitrosodiphenylamine	12		
2,6-Dinitrotoluene	0.044		
1,4-Dichlorobenzene	2.4		
<b>Pesticides/PCBs</b>			
alpha-BHC	0.0047		
Heptachlor Epoxide	0.0033		
Aldrin	0.002		
4,4'-DDD	0.12		
4,4'-DDT	0.088		
gamma-BHC (Lindane)	0.046		
beta-BHC	0.016		
4,4'-DDE	0.16		
PCBs (b)	10	125	NO

**Notes:**

- a) Risk Index (RI) is the ratio of the measured concentration to the concentration that represents a  $1 \times 10^{-6}$  risk. The RI's must be less than 1.0. Nondetects will not be considered in the calculations.
- b) PCB is not included in the CRI calculation. Concentrations must be less than 10 mg/kg to leave in place and less than 2 mg/kg in treated materials for backfill.

## Compliance Calculation - Soil Sample from Test Pit SA02

<b>Noncarcinogenic Contaminant</b>	<b>Cleanup Goal (mg/kg)</b>	<b>Measured Concentration (mg/kg)</b>	<b>Hazard Index</b>
<b>Volatiles</b>			
Acetone	2,400		0.00
2-Butanone	620	520	0.84
Chlorobenzene	150		0.00
Chloroethane	2,700		0.00
1,2-Dichloroethene (cis)	250		0.00
Ethylbenzene	1,300	680	0.52
4-Methyl-2-pentanone	630	360	0.57
Toluene	5,000	1,300	0.26
1,1,1-Trichloroethane	2,300		0.00
Xylenes (mixed)	26,000	3,600	0.14
Total Noncarcinogenic Volatiles		6,460	
<b>Semivolatiles</b>			
Naphthalene	82	140	1.71
Di-n-butylphthalate	2,300	84	0.04
1,2,4-Trichlorobenzene	16		0.00
<b>Pesticides/PCBs</b>			
Endosulfan I	0.63		0.00
<b>Metals</b>			
Antimony	15	32	2.13
Cadmium	51	41	0.80
Barium	2,600	1,120	0.43
Chromium (VI)	1,400	551	0.39
<b>Miscellaneous Groups</b>			
Nitrogenated Benzenes	6.2		0.00
n-Chain Alkanes	760		0.00
Branched Alkanes	770		0.00
Methyl Propyl Benzenes	490		0.00
Halogenated Alkanes	2,300		0.00
Dimethyl Ethyl Benzenes	1,300		0.00
Non-Cyclic Acids	1,000		0.00
Methylated Naphthalenes	85		0.00
Oxygenated Benzenes	1,200		0.00
Diethyl Benzenes	1,300		0.00
Propenyl Benzenes	320		0.00
Ethyl Methyl Benzenes	4,900		0.00
<b>Cumulative Hazard Index (CHI) (a)</b>			<b>7.84</b>
Total Volatiles	6,790	mg/kg	
Classification (b)	<b>Waste</b>		

**Notes :**

- a) Hazard Index is the ratio of the measured concentration to the Final remediation Level. The cumulative hazard index (CHI) is the sum of the hazard indexes for all noncarcinogenic contaminants of concern and must be less than 1.0. Nondetects will not be considered in the calculation of the CHI.
- b) If PCBs are greater than 10 mg/kg and Total Volatiles are greater than 10,000 mg/kg, then the soil is classified as a "Waste". Otherwise, if any of the carcinogenic contaminants exceed their cleanup goals or the CHI exceeds 1, the soil is classified as a contaminated soil. All other soils are classified as "Clean".

## Compliance Calculation - Soil Sample from Test Pit SA04

<u>Carcinogenic Contaminants</u>	<u>Cleanup Goal (mg/kg)</u>	<u>Measured Concentration (mg/kg)</u>	<u>Cleanup Goal Met?</u>
<b>Volatiles</b>			
Benzene	1	45	NO
Carbon Tetrachloride	0.38		
Chloroform	9.5		
1,2-Dichloroethane	0.64		
1,1-Dichloroethene	0.098		
1,2-Dichloropropane	0.42		
Methylene Chloride	6.2		
Styrene	1.7		
1,1,2,2-Tetrachloroethane	0.28		
Tetrachloroethene	1.1	880.0	NO
1,1,2-Trichloroethane	0.51		
Trichloroethene	5.3	350	NO
Vinyl Chloride	0.031		
Total Carcinogenic Volatiles		1,275	
<b>Semivolatiles</b>			
CPAHs	0.0026		
<b>Cyclic Ketones</b>	7.3		
bis(2-Ethylhexyl)phthalate	1.1		
Isophorone	7.2		
Pentachlorophenol	0.43		
2,4-Dinitrotoluene	0.044		
bis(2-Chloroethyl)ether	0.027		
Hexachlorobutadiene	0.36		
Hexachlorobenzene	0.018		
n-Nitrosodiphenylamine	12		
2,6-Dinitrotoluene	0.044		
1,4-Dichlorobenzene	2.4		
<b>Pesticides/PCBs</b>			
alpha-BHC	0.0047		
Heptachlor Epoxide	0.0033		
Aldrin	0.002		
4,4'-DDD	0.12		
4,4'-DDT	0.088		
gamma-BHC (Lindane)	0.046		
beta-BHC	0.016		
4,4'-DDE	0.16		
PCBs (b)	10	330	NO

**Notes:**

- a) Risk Index (RI) is the ratio of the measured concentration to the concentration that represents a  $1 \times 10^{-6}$  risk. The RI's must be less than 1.0. Nondetects will not be considered in the calculations.
- b) PCB is not included in the CRI calculation. Concentrations must be less than 10 mg/kg to leave in place and less than 2 mg/kg in treated materials for backfill.

## Compliance Calculation - Soil Sample from Test Pit SA04

<u>Noncarcinogenic Contaminant</u>	<u>Cleanup Goal (mg/kg)</u>	<u>Measured Concentration (mg/kg)</u>	<u>Hazard Index</u>
<b>Volatiles</b>			
Acetone	2,400	1,200	0.50
2-Butanone	620	170	0.27
Chlorobenzene	150		0.00
Chloroethane	2,700		0.00
1,2-Dichloroethene (cis)	250		0.00
Ethylbenzene	1,300	300	0.23
4-Methyl-2-pentanone	630	110	0.17
Toluene	5,000	920	0.18
1,1,1-Trichloroethane	2,300		0.00
Xylenes (mixed)	26,000	1,600	0.06
Total Noncarcinogenic Volatiles		4,300	
<b>Semivolatiles</b>			
Naphthalene	82		0.00
Di-n-butylphthalate	2,300		0.00
1,2,4-Trichlorobenzene	16		0.00
<b>Pesticides/PCBs</b>			
Endosulfan I	0.63		0.00
<b>Metals</b>			
Antimony	15		0.00
Cadmium	51	3	0.06
Barium	2,600	170	0.07
Chromium (VI)	1,400	57	0.04
<b>Miscellaneous Groups</b>			
Nitrogenated Benzenes	6.2		0.00
n-Chain Alkanes	760		0.00
Branched Alkanes	770		0.00
Methyl Propyl Benzenes	490		0.00
Halogenated Alkanes	2,300		0.00
Dimethyl Ethyl Benzenes	1,300		0.00
Non-Cyclic Acids	1,000		0.00
Methylated Naphthalenes	85		0.00
Oxygenated Benzenes	1,200		0.00
Diethyl Benzenes	1,300		0.00
Propenyl Benzenes	320		0.00
Ethyl Methyl Benzenes	4,900		0.00
<b>Cumulative Hazard Index (CHI) (a)</b>			1.59
Total Volatiles	5,575	mg/kg	
Classification (b)	<b>Waste</b>		

**Notes :**

- a) Hazard Index is the ratio of the measured concentration to the Final remediation Level. The cumulative hazard index (CHI) is the sum of the hazard indexes for all noncarcinogenic contaminants of concern and must be less than 1.0. Nondetects will not be considered in the calculation of the CHI.
- b) If PCBs are greater than 10 mg/kg and Total Volatiles are greater than 10,000 mg/kg, then the soil is classified as a "Waste". Otherwise, if any of the carcinogenic contaminants exceed their cleanup goals or the CHI exceeds 1, the soil is classified as a contaminated soil. All other soils are classified as "Clean".

## Compliance Calculation - Soil Sample from Trench #12

<u>Carcinogenic Contaminants</u>	<u>Cleanup Goal (mg/kg)</u>	<u>Measured Concentration (mg/kg)</u>	<u>Cleanup Goal Met?</u>
<b>Volatiles</b>			
Benzene	1		
Carbon Tetrachloride	0.38		
Chloroform	9.5		
1,2-Dichloroethane	0.64		
1,1-Dichloroethene	0.098		
1,2-Dichloropropane	0.42		
Methylene Chloride	6.2		
Styrene	1.7		
1,1,2,2-Tetrachloroethane	0.28		
Tetrachloroethene	1.1	1.0	
1,1,2-Trichloroethane	0.51		
Trichloroethene	5.3	1	
Vinyl Chloride	0.031		
Total Carcinogenic Volatiles		2	
<b>Semivolatiles</b>			
CPAHs	0.0026		
<b>Cyclic Ketones</b>			
bis(2-Ethylhexyl)phthalate	1.1	9	NO
Isophorone	7.2		
Pentachlorophenol	0.43		
2,4-Dinitrotoluene	0.044		
bis(2-Chloroethyl)ether	0.027		
Hexachlorobutadiene	0.36		
Hexachlorobenzene	0.018		
n-Nitrosodiphenylamine	12		
2,6-Dinitrotoluene	0.044		
1,4-Dichlorobenzene	2.4		
<b>Pesticides/PCBs</b>			
alpha-BHC	0.0047		
Heptachlor Epoxide	0.0033		
Aldrin	0.002		
4,4'-DDD	0.12		
4,4'-DDT	0.088		
gamma-BHC (Lindane)	0.046		
beta-BHC	0.016		
4,4'-DDE	0.16		
PCBs (b)	10	5	

**Notes:**

- a) Risk Index (RI) is the ratio of the measured concentration to the concentration that represents a  $1 \times 10^{-6}$  risk. The RI's must be less than 1.0. Nondetects will not be considered in the calculations.
- b) PCB is not included in the CRI calculation. Concentrations must be less than 10 mg/kg to leave in place and less than 2 mg/kg in treated materials for backfill.

## Compliance Calculation - Soil Sample from Trench #12

<u>Noncarcinogenic Contaminant</u>	<u>Cleanup Goal (mg/kg)</u>	<u>Measured Concentration (mg/kg)</u>	<u>Hazard Index</u>
<b>Volatiles</b>			
Acetone	2,400		0.00
2-Butanone	620		0.00
Chlorobenzene	150		0.00
Chloroethane	2,700		0.00
1,2-Dichloroethene (cis)	250	0.14	0.00
Ethylbenzene	1,300		0.00
4-Methyl-2-pentanone	630		0.00
Toluene	5,000	0.08	0.00
1,1,1-Trichloroethane	2,300	0.03	0.00
Xylenes (mixed)	26,000	0.8	0.00
Total Noncarcinogenic Volatiles		1	
<b>Semivolatiles</b>			
Naphthalene	82		0.00
Di-n-butylphthalate	2,300		0.00
1,2,4-Trichlorobenzene	16		0.00
<b>Pesticides/PCBs</b>			
Endosulfan I	0.63		0.00
<b>Metals</b>			
Antimony	15		0.00
Cadmium	51	1	0.02
Barium	2,600	31	0.01
Chromium (VI)	1,400	14	0.01
<b>Miscellaneous Groups</b>			
<b>Nitrogenated Benzenes</b>	6.2		0.00
<b>n-Chain Alkanes</b>	760		0.00
<b>Branched Alkanes</b>	770		0.00
<b>Methyl Propyl Benzenes</b>	490		0.00
<b>Halogenated Alkanes</b>	2,300		0.00
<b>Dimethyl Ethyl Benzenes</b>	1,300		0.00
<b>Non-Cyclic Acids</b>	1,000		0.00
<b>Methylated Naphthalenes</b>	85		0.00
<b>Oxygenated Benzenes</b>	1,200		0.00
<b>Diethyl Benzenes</b>	1,300		0.00
<b>Propenyl Benzenes</b>	320		0.00
<b>Ethyl Methyl Benzenes</b>	4,900		0.00
<b>Cumulative Hazard Index (CHI) (a)</b>			0.04
Total Volatiles	3	mg/kg	
Classification (b)	Cont. Soil		

**Notes :**

- a) Hazard Index is the ratio of the measured concentration to the Final remediation Level. The cumulative hazard index (CHI) is the sum of the hazard indexes for all noncarcinogenic contaminants of concern and must be less than 1.0. Nondetects will not be considered in the calculation of the CHI.
- b) If PCBs are greater than 10 mg/kg and Total Volatiles are greater than 10,000 mg/kg, then the soil is classified as a "Waste". Otherwise, if any of the carcinogenic contaminants exceed their cleanup goals or the CHI exceeds 1, the soil is classified as a contaminated soil. All other soils are classified as "Clean".

## Compliance Calculation - Soil Sample from Test Pit SA01 #1

<u>Carcinogenic Contaminants</u>	<u>Cleanup Goal (mg/kg)</u>	<u>Measured Concentration (mg/kg)</u>	<u>Cleanup Goal Met?</u>
<b>Volatiles</b>			
Benzene	1		
Carbon Tetrachloride	0.38		
Chloroform	9.5		
1,2-Dichloroethane	0.64		
1,1-Dichloroethene	0.098		
1,2-Dichloropropane	0.42		
Methylene Chloride	6.2		
Styrene	1.7		
1,1,2,2-Tetrachloroethane	0.28		
Tetrachloroethene	1.1	280.0	NO
1,1,2-Trichloroethane	0.51		
Trichloroethene	5.3		
Vinyl Chloride	0.031		
Total Carcinogenic Volatiles		280	
<b>Semivolatiles</b>			
CPAHs	0.0026		
<b>Cyclic Ketones</b>			
bis(2-Ethylhexyl)phthalate	1.1	40	NO
Isophorone	7.2		
Pentachlorophenol	0.43		
2,4-Dinitrotoluene	0.044		
bis(2-Chloroethyl)ether	0.027		
Hexachlorobutadiene	0.36		
Hexachlorobenzene	0.018		
n-Nitrosodiphenylamine	12		
2,6-Dinitrotoluene	0.044		
1,4-Dichlorobenzene	2.4		
<b>Pesticides/PCBs</b>			
alpha-BHC	0.0047		
Heptachlor Epoxide	0.0033		
Aldrin	0.002		
4,4'-DDD	0.12		
4,4'-DDT	0.088		
gamma-BHC (Lindane)	0.046		
beta-BHC	0.016		
4,4'-DDE	0.16		
PCBs (b)	10	14	NO

**Notes:**

- a) Risk Index (RI) is the ratio of the measured concentration to the concentration that represents a 1x10-6 risk  
The RI's must be less than 1.0. Nondetects will not be considered in the calculations.
- b) PCB is not included in the CRI calculation. Concentrations must be less than 10 mg/kg to leave in place and less than 2 mg/kg in treated materials for backfill.

## Compliance Calculation - Soil Sample from Test Pit SA01 #1

<b>Noncarcinogenic Contaminant</b>	<b>Cleanup Goal (mg/kg)</b>	<b>Measured Concentration (mg/kg)</b>	<b>Hazard Index</b>
<b>Volatiles</b>			
Acetone	2,400		0.00
2-Butanone	620		0.00
Chlorobenzene	150		0.00
Chloroethane	2,700		0.00
1,2-Dichloroethene (cis)	250		0.00
Ethylbenzene	1,300		0.00
4-Methyl-2-pentanone	630		0.00
Toluene	5,000	160	0.03
1,1,1-Trichloroethane	2,300		0.00
Xylenes (mixed)	26,000	280	0.01
Total Noncarcinogenic Volatiles		440	
<b>Semivolatiles</b>			
Naphthalene	82		0.00
Di-n-butylphthalate	2,300		0.00
1,2,4-Trichlorobenzene	16		0.00
<b>Pesticides/PCBs</b>			
Endosulfan I	0.63		0.00
<b>Metals</b>			
Antimony	15	13	0.87
Cadmium	51	2	0.04
Barium	2,600	1,210	0.47
Chromium (VI)	1,400	753	0.54
<b>Miscellaneous Groups</b>			
<b>Nitrogenated Benzenes</b>	<b>6.2</b>		<b>0.00</b>
<b>n-Chain Alkanes</b>	<b>760</b>		<b>0.00</b>
<b>Branched Alkanes</b>	<b>770</b>		<b>0.00</b>
<b>Methyl Propyl Benzenes</b>	<b>490</b>		<b>0.00</b>
<b>Halogenated Alkanes</b>	<b>2,300</b>		<b>0.00</b>
<b>Dimethyl Ethyl Benzenes</b>	<b>1,300</b>		<b>0.00</b>
<b>Non-Cyclic Acids</b>	<b>1,000</b>		<b>0.00</b>
<b>Methylated Naphthalenes</b>	<b>85</b>		<b>0.00</b>
<b>Oxygenated Benzenes</b>	<b>1,200</b>		<b>0.00</b>
<b>Diethyl Benzenes</b>	<b>1,300</b>		<b>0.00</b>
<b>Propenyl Benzenes</b>	<b>320</b>		<b>0.00</b>
<b>Ethyl Methyl Benzenes</b>	<b>4,900</b>		<b>0.00</b>
<b>Cumulative Hazard Index (CHI) (a)</b>			<b>1.96</b>
Total Volatiles	720	mg/kg	
Classification (b)	<b>Waste</b>		

**Notes :**

- a) Hazard Index is the ratio of the measured concentration to the Final remediation Level. The cumulative hazard index (CHI) is the sum of the hazard indexes for all noncarcinogenic contaminants of concern and must be less than 1.0. Nondetects will not be considered in the calculation of the CHI.
- b) If PCBs are greater than 10 mg/kg and Total Volatiles are greater than 10,000 mg/kg, then the soil is classified as a "Waste". Otherwise, if any of the carcinogenic contaminants exceed their cleanup goals or the CHI exceeds 1, the soil is classified as a contaminated soil. All other soils are classified as "Clean".

## Compliance Calculation - Soil Sample from Test Pit SA01 #2

<u>Carcinogenic Contaminants</u>	<u>Cleanup Goal (mg/kg)</u>	<u>Measured Concentration (mg/kg)</u>	<u>Cleanup Goal Met?</u>
<b>Volatiles</b>			
Benzene	1		
Carbon Tetrachloride	0.38		
Chloroform	9.5		
1,2-Dichloroethane	0.64		
1,1-Dichloroethene	0.098		
1,2-Dichloropropane	0.42		
Methylene Chloride	6.2		
Styrene	1.7		
1,1,2,2-Tetrachloroethane	0.28		
Tetrachloroethene	1.1		
1,1,2-Trichloroethane	0.51		
Trichloroethene	5.3		
Vinyl Chloride	0.031		
Total Carcinogenic Volatiles		0	
<b>Semivolatiles</b>			
CPAhs	0.0026		
<b>Cyclic Ketones</b>			
bis(2-Ethylhexyl)phthalate	1.1	15	NO
Isophorone	7.2		
Pentachlorophenol	0.43		
2,4-Dinitrotoluene	0.044		
bis(2-Chloroethyl)ether	0.027		
Hexachlorobutadiene	0.36		
Hexachlorobenzene	0.018		
n-Nitrosodiphenylamine	12		
2,6-Dinitrotoluene	0.044		
1,4-Dichlorobenzene	2.4		
<b>Pesticides/PCBs</b>			
alpha-BHC	0.0047		
Heptachlor Epoxide	0.0033		
Aldrin	0.002		
4,4'-DDD	0.12		
4,4'-DDT	0.088		
gamma-BHC (Lindane)	0.046		
beta-BHC	0.016		
4,4'-DDE	0.16		
PCBs (b)	10	9	

**Notes:**

- a) Risk Index (RI) is the ratio of the measured concentration to the concentration that represents a 1x10-6 risk. The RI's must be less than 1.0. Nondetects will not be considered in the calculations.
- b) PCB is not included in the CRI calculation. Concentrations must be less than 10 mg/kg to leave in place and less than 2 mg/kg in treated materials for backfill.

## Compliance Calculation - Soil Sample from Test Pit SA01 #2

<u>Noncarcinogenic Contaminant</u>	<u>Cleanup Goal (mg/kg)</u>	<u>Measured Concentration (mg/kg)</u>	<u>Hazard Index</u>
<b>Volatiles</b>			
Acetone	2,400		0.00
2-Butanone	620	28	0.05
Chlorobenzene	150		0.00
Chloroethane	2,700		0.00
1,2-Dichloroethene (cis)	250		0.00
Ethylbenzene	1,300		0.00
4-Methyl-2-pentanone	630		0.00
Toluene	5,000	130	0.03
1,1,1-Trichloroethane	2,300		0.00
Xylenes (mixed)	26,000	10	0.00
Total Noncarcinogenic Volatiles		168	
<b>Semivolatiles</b>			
Naphthalene	82		0.00
Di-n-butylphthalate	2,300		0.00
1,2,4-Trichlorobenzene	16		0.00
<b>Pesticides/PCBs</b>			
Endosulfan I	0.63		0.00
<b>Metals</b>			
Antimony	15		0.00
Cadmium	51	2	0.04
Barium	2,600	63	0.02
Chromium (VI)	1,400	10	0.01
<b>Miscellaneous Groups</b>			
Nitrogenated Benzenes	6.2		0.00
n-Chain Alkanes	760		0.00
Branched Alkanes	770		0.00
Methyl Propyl Benzenes	490		0.00
Halogenated Alkanes	2,300		0.00
Dimethyl Ethyl Benzenes	1,300		0.00
Non-Cyclic Acids	1,000		0.00
Methylated Naphthalenes	85		0.00
Oxygenated Benzenes	1,200		0.00
Diethyl Benzenes	1,300		0.00
Propenyl Benzenes	320		0.00
Ethyl Methyl Benzenes	4,900		0.00
Cumulative Hazard Index (CHI) (a)			0.14
Total Volatiles	168 mg/kg		
Classification (b)	Cont. Soil		

**Notes :**

- a) Hazard Index is the ratio of the measured concentration to the Final remediation Level. The cumulative hazard index (CHI) is the sum of the hazard indexes for all noncarcinogenic contaminants of concern and must be less than 1.0. Nondetects will not be considered in the calculation of the CHI.
- b) If PCBs are greater than 10 mg/kg and Total Volatiles are greater than 10,000 mg/kg, then the soil is classified as a "Waste". Otherwise, if any of the carcinogenic contaminants exceed their cleanup goals or the CHI exceeds 1, the soil is classified as a contaminated soil. All other soils are classified as "Clean".

**APPENDIX I**

**AMBIENT AIR MONITORING DATA**

**Summary of Air Sampling Results**  
**Pretreatment / Materials Handling Study**  
**American Chemical Services**  
**Griffith, Indiana**

Date	Day	Sample Numbers	Description	Comments
6/23/97	Day Zero	AD-0-06-23-97	Downwind	Day Zero Background Air Sampling
		AU-0-06-23-97	Upwind	
6/25/97	Day One	AD-1-06-25-97	Downwind	Test Pit Excavation #4 and #5
		AU-1-06-25-97	Upwind	
6/26/97	Day Two	AD-2-06-26-97	Downwind	Test Pit Excavation #2, #1 and #3 and Deeper Excavation at #5
			Upwind	
7/16/97	Day Three	AD-3-06-26-97	Downwind	Perimeter Trench and Point Excavation Coordinated by Focus Environmental
		AU-3-06-26-97	Upwind	
7/17/97	Day Four	AD-4-06-26-97	Downwind	
		AU-4-06-26-97	Upwind	
7/18/97	Day Five	AD-5-06-26-97	Downwind	
		AU-5-06-26-97	Upwind	

APPENDIX *H*

**Summary of Meteorological Data During PMHS at ACS Site**

Date	Time	Wind Speed (mph)	Wind Direction (°)	Sigma (°)	Air Temp. (°F)	Relative Humidity (%)	Barometric Pressure (in Hg)	BATT (VDC)
06/23/97	01:00	0.9	19.2	34.4	71	100	29.4	11.8
06/23/97	02:00	0.9	92.4	45.6	71	100	29.4	11.8
06/23/97	03:00	1.6	127.0	54.3	73	100	29.4	11.8
06/23/97	04:00	2.3	129.0	23.5	73	100	29.4	11.8
06/23/97	05:00	2.1	121.7	21.7	73	100	29.4	11.8
06/23/97	06:00	1.3	112.3	39.2	72	100	29.4	11.8
06/23/97	07:00	2.6	118.2	17.0	73	100	29.4	11.8
06/23/97	08:00	3.4	132.4	23.2	76	99	29.5	11.8
06/23/97	09:00	4.2	130.0	20.4	79	95	29.5	11.8
06/23/97	10:00	3.7	130.2	29.2	83	84	29.5	11.8
06/23/97	11:00	4.5	131.7	27.3	87	73	29.6	11.8
06/23/97	12:00	5.0	131.6	25.0	90	66	29.6	11.8
06/23/97	13:00	5.2	133.1	27.9	92	61	29.5	11.8
06/23/97	14:00	4.9	134.1	26.4	93	56	29.5	11.8
06/23/97	15:00	4.8	132.8	26.8	95	51	29.5	11.8
06/23/97	16:00	4.1	134.4	40.9	97	49	29.5	11.8
06/23/97	17:00	4.5	133.2	24.0	95	48	29.5	11.8
06/23/97	18:00	3.8	131.1	23.5	94	49	29.5	11.8
06/23/97	19:00	2.5	122.8	30.6	89	57	29.4	11.8
06/23/97	20:00	2.9	127.8	62.4	83	73	29.4	11.8
06/23/97	21:00	2.3	122.7	46.5	76	99	29.4	11.8
06/23/97	22:00	0.9	112.8	35.7	74	100	29.4	11.8
06/23/97	23:00	0.8	126.3	15.2	72	100	29.4	11.8
06/23/97	00:00	2.3	130.8	17.7	75	93	29.4	11.8
<b>06/25/97</b>	01:00	4.8	135.9	20.1	80	68	29.3	11.7
06/25/97	02:00	5.0	134.8	21.0	79	68	29.3	11.7
06/25/97	03:00	4.1	133.9	20.6	78	72	29.3	11.7
06/25/97	04:00	3.6	133.7	19.4	77	76	29.2	11.7
06/25/97	05:00	2.5	169.3	44.9	76	80	29.3	11.7
06/25/97	06:00	2.4	150.6	62.6	75	84	29.3	11.7
06/25/97	07:00	1.8	251.3	71.6	72	100	29.3	11.7
06/25/97	08:00	2.3	116.2	35.5	75	99	29.3	11.7
06/25/97	09:00	2.8	132.3	41.6	79	89	29.4	11.7
06/25/97	10:00	3.0	129.4	39.7	80	85	29.4	11.7
06/25/97	11:00	3.0	123.0	36.6	80	82	29.3	11.7
06/25/97	12:00	3.9	126.3	27.2	83	71	29.3	11.7
06/25/97	13:00	4.1	133.0	25.5	86	64	29.3	11.7
06/25/97	14:00	3.2	141.8	76.4	90	64	29.4	11.7
06/25/97	15:00	2.2	213.5	87.0	85	68	29.3	11.7
06/25/97	16:00	3.1	26.1	42.0	84	70	29.3	11.7
06/25/97	17:00	2.2	349.9	49.3	84	72	29.3	11.7

APPENDIX *H*

**Summary of Meteorological Data During PMHS at ACS Site**

Date	Time	Wind Speed (mph)	Wind Direction (°)	Sigma (°)	Air Temp. (°F)	Relative Humidity (%)	Barometric Pressure (in Hg)	BATT (VDC)
06/25/97	18:00	2.4	267.3	81.8	86	62	29.3	11.7
06/25/97	19:00	2.9	329.1	32.5	82	74	29.3	11.7
06/25/97	20:00	1.4	88.8	56.6	78	89	29.3	11.7
06/25/97	21:00	1.4	65.3	61.3	75	97	29.3	11.7
06/25/97	22:00	0.7	115.7	26.6	74	100	29.3	11.7
06/25/97	23:00	0.7	90.7	13.8	73	100	29.3	11.7
06/25/97	00:00	0.9	156.0	67.3	73	100	29.3	11.7
<b>06/26/97</b>	01:00	0.8	28.5	34.0	72	100	29.3	11.7
06/26/97	02:00	1.4	305.5	28.4	72	100	29.3	11.7
06/26/97	03:00	1.0	245.8	28.8	71	100	29.3	11.6
06/26/97	04:00	1.2	271.5	15.1	68	100	29.3	11.6
06/26/97	05:00	2.8	290.3	21.4	70	75	29.3	11.6
06/26/97	06:00	1.1	350.8	21.4	66	85	29.3	11.6
06/26/97	07:00	1.0	86.3	18.7	67	90	29.4	11.6
06/26/97	08:00	1.4	101.5	34.7	73	77	29.5	11.6
06/26/97	09:00	3.6	288.3	50.2	79	56	29.5	11.7
06/26/97	10:00	5.3	305.5	28.4	80	43	29.5	11.7
06/26/97	11:00	5.3	306.9	28.9	82	41	29.5	11.7
06/26/97	12:00	5.9	313.1	29.3	82	39	29.5	11.7
06/26/97	13:00	6.7	318.6	27.9	82	40	29.5	11.7
06/26/97	14:00	6.4	323.6	26.0	82	40	29.5	11.7
06/26/97	15:00	5.7	326.9	27.9	82	41	29.5	11.7
06/26/97	16:00	5.5	329.8	27.4	83	42	29.5	11.7
06/26/97	17:00	5.4	322.9	26.3	82	43	29.5	11.7
06/26/97	18:00	5.1	327.7	24.0	80	45	29.4	11.7
06/26/97	19:00	2.9	334.6	30.4	76	52	29.4	11.6
06/26/97	20:00	2.4	341.3	30.8	75	53	29.4	11.6
06/26/97	21:00	0.5	13.7	16.5	69	69	29.4	11.6
06/26/97	22:00	0.4	347.2	18.2	65	84	29.4	11.6
06/26/97	23:00	0.8	341.4	47.4	63	92	29.4	11.6
06/26/97	00:00	0.6	339.5	5.8	61	100	29.4	11.6
<b>07/16/97</b>	01:00	1.8	124.0	13.6	72	100	29.4	11.8
07/16/97	02:00	2.2	129.6	17.4	72	98	29.3	11.8
07/16/97	03:00	2.3	126.2	19.5	71	97	29.3	11.8
07/16/97	04:00	1.8	113.5	14.4	70	99	29.3	11.8
07/16/97	05:00	1.7	110.4	12.2	69	100	29.3	11.8
07/16/97	06:00	1.6	110.9	7.7	68	100	29.3	11.8
07/16/97	07:00	1.9	121.7	18.1	69	98	29.4	11.8
07/16/97	08:00	2.6	121.5	24.6	75	87	29.4	11.8
07/16/97	09:00	2.7	125.2	35.2	81	72	29.5	11.8
07/16/97	10:00	3.1	130.1	55.2	88	58	29.5	11.8

H  
APPENDIX ~~G~~

**Summary of Meteorological Data During PMHS at ACS Site**

Date	Time	Wind Speed (mph)	Wind Direction (°)	Sigma (°)	Air Temp. (°F)	Relative Humidity (%)	Barometric Pressure (in Hg)	BATT (VDC)
07/16/97	11:00	2.8	129.1	79.4	92	50	29.5	11.8
07/16/97	12:00	3.8	131.9	65.9	95	47	29.5	11.8
07/16/97	13:00	4.3	133.0	47.8	96	46	29.5	11.8
07/16/97	14:00	4.8	132.7	33.1	97	42	29.5	11.8
07/16/97	15:00	5.6	131.8	27.3	97	40	29.4	11.8
07/16/97	16:00	5.7	133.3	27.9	96	40	29.4	11.8
07/16/97	17:00	5.6	135.2	28.4	95	39	29.4	11.8
07/16/97	18:00	5.9	136.0	24.7	93	41	29.4	11.8
07/16/97	19:00	5.5	134.9	23.2	89	46	29.4	11.8
07/16/97	20:00	3.9	133.2	22.8	86	50	29.4	11.8
07/16/97	21:00	3.3	132.3	18.1	83	58	29.4	11.8
07/16/97	22:00	3.2	128.5	18.3	80	66	29.4	11.8
07/16/97	23:00	2.1	128.4	20.3	78	75	29.4	11.8
07/16/97	00:00	2.2	290.3	49.2	77	78	29.4	11.7
<b>07/17/97</b>	01:00	1.6	249.2	30.1	75	78	29.4	11.7
07/17/97	02:00	2.3	118.8	13.2	72	85	29.4	11.7
07/17/97	03:00	3.9	135.1	16.5	74	75	29.3	11.7
07/17/97	04:00	5.9	135.3	20.7	76	75	29.3	11.7
07/17/97	05:00	5.4	134.0	25.5	76	76	29.3	11.7
07/17/97	06:00	5.4	133.1	29.4	76	76	29.3	11.7
07/17/97	07:00	4.6	128.7	26.8	76	77	29.3	11.7
07/17/97	08:00	4.5	130.6	36.2	77	75	29.3	11.7
07/17/97	09:00	4.6	129.9	47.0	80	71	29.4	11.7
07/17/97	10:00	3.8	133.5	59.4	85	64	29.4	11.7
07/17/97	11:00	2.6	219.6	87.3	87	63	29.4	11.8
07/17/97	12:00	2.7	146.8	77.4	90	56	29.4	11.8
07/17/97	13:00	4.0	131.5	35.4	92	54	29.4	11.8
07/17/97	14:00	3.6	130.5	35.2	92	54	29.4	11.8
07/17/97	15:00	4.9	131.3	27.6	92	54	29.4	11.8
07/17/97	16:00	5.4	130.5	26.5	93	53	29.3	11.8
07/17/97	17:00	5.0	131.4	24.7	92	51	29.3	11.8
07/17/97	18:00	6.2	133.2	23.2	90	54	29.3	11.8
07/17/97	19:00	5.3	132.6	23.4	87	59	29.3	11.7
07/17/97	20:00	3.6	133.0	21.7	85	61	29.3	11.7
07/17/97	21:00	2.4	127.3	16.6	82	68	29.3	11.7
07/17/97	22:00	2.1	125.3	12.1	80	79	29.3	11.7
07/17/97	23:00	1.0	127.3	5.9	77	89	29.3	11.7
07/17/97	00:00	0.4	123.4	0.0	73	99	29.3	11.7
<b>07/18/97</b>	01:00	1.5	118.4	7.6	73	100	29.3	11.7
07/18/97	02:00	1.8	128.5	10.1	74	100	29.3	11.7
07/18/97	03:00	2.0	133.6	14.4	74	100	29.3	11.7

APPENDIX H

**Summary of Meteorological Data During PMHS at ACS Site**

Date	Time	Wind Speed (mph)	Wind Direction (°)	Sigma (°)	Air Temp. (°F)	Relative Humidity (%)	Barometric Pressure (in Hg)	BATT (VDC)
07/18/97	04:00	2.0	126.5	18.8	73	99	29.3	11.7
07/18/97	05:00	1.7	120.2	12.5	72	100	29.2	11.7
07/18/97	06:00	1.3	115.5	8.5	70	100	29.2	11.7
07/18/97	07:00	2.1	129.0	18.7	73	99	29.3	11.7
07/18/97	08:00	2.0	131.9	51.1	77	91	29.3	11.7
07/18/97	09:00	1.9	111.9	65.3	83	79	29.4	11.7
07/18/97	10:00	2.5	135.7	60.6	88	70	29.4	11.7
07/18/97	11:00	2.2	143.3	65.4	92	64	29.4	11.7
07/18/97	12:00	2.5	139.5	50.7	95	58	29.4	11.7
07/18/97	13:00	3.1	144.3	46.9	95	58	29.4	11.7
07/18/97	14:00	4.5	59.2	39.6	85	80	29.3	11.7
07/18/97	15:00	5.1	139.2	61.1	70	100	29.3	11.7
07/18/97	16:00	2.4	24.9	57.5	71	100	29.2	11.7
07/18/97	17:00	5.3	239.7	73.0	70	100	29.3	11.7
07/18/97	18:00	3.3	315.1	44.6	69	100	29.3	11.6
07/18/97	19:00	1.7	110.3	53.1	69	100	29.2	11.6
07/18/97	20:00	1.3	306.0	71.9	69	100	29.2	11.6
07/18/97	21:00	0.8	359.1	27.2	69	100	29.3	11.6
07/18/97	22:00	1.1	292.9	55.3	69	100	29.3	11.6
07/18/97	23:00	0.7	109.6	40.7	68	100	29.3	11.6
07/18/97	00:00	0.6	112.4	15.6	67	100	29.3	11.6



## DAY 0 DATA

### SAMPLE DESCRIPTION INFORMATION for Montgomery Watson

Lab ID	Client ID	Matrix	Sampled Date	Received Time	Received Date
126651-0001-SA	AD-0-06-23-97	AIR	23 JUN 97	17:00	25 JUN 97
126651-0002-SA	AU-0-06-23-97	AIR	23 JUN 97	17:00	25 JUN 97

## DOWNWIND

Volatile Organics by GCMS - EPA TO14



Client Name: Montgomery Watson  
 Client ID: AD-0-06-23-97  
 LAB ID: 126651-0001-SA  
 Matrix: AIR                      Sampled: 23 JUN 97                      Received: 25 JUN 97  
 Authorized: 25 JUN 97              Prepared: N/A                      Analyzed: 02 JUL 97  
 Instrument: GC/MS-B                Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
Dichlorodifluoromethane	ND		2.0	ppb (v/v)
Chloromethane	ND		4.0	ppb (v/v)
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		2.0	ppb (v/v)
Vinyl chloride	ND		2.0	ppb (v/v)
Bromomethane	ND		2.0	ppb (v/v)
Chloroethane	ND		4.0	ppb (v/v)
Trichlorofluoromethane	ND		2.0	ppb (v/v)
1,1-Dichloroethene	ND		2.0	ppb (v/v)
Carbon disulfide	ND		10	ppb (v/v)
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	ppb (v/v)
Acetone	ND		10	ppb (v/v)
Methylene chloride	ND		2.0	ppb (v/v)
trans-1,2-Dichloroethene	ND		2.0	ppb (v/v)
1,1-Dichloroethane	ND		2.0	ppb (v/v)
Vinyl acetate	ND		10	ppb (v/v)
cis-1,2-Dichloroethene	ND		2.0	ppb (v/v)
2-Butanone	ND		10	ppb (v/v)
Chloroform	ND		2.0	ppb (v/v)
1,1,1-Trichloroethane	ND		2.0	ppb (v/v)
Carbon tetrachloride	ND		2.0	ppb (v/v)
Benzene	ND		2.0	ppb (v/v)
1,2-Dichloroethane	ND		2.0	ppb (v/v)
Trichloroethene	ND		2.0	ppb (v/v)
1,2-Dichloropropane	ND		2.0	ppb (v/v)
Bromodichloromethane	ND		2.0	ppb (v/v)
cis-1,3-Dichloropropene	ND		2.0	ppb (v/v)
4-Methyl-2-pentanone	ND		10	ppb (v/v)
Toluene	4.0		2.0	ppb (v/v)
trans-1,3-Dichloropropene	ND		2.0	ppb (v/v)
1,1,2-Trichloroethane	ND		2.0	ppb (v/v)
Tetrachloroethene	ND		2.0	ppb (v/v)
2-Hexanone	ND		30	ppb (v/v)
Dibromochloromethane	ND		2.0	ppb (v/v)
1,2-Dibromoethane (EDB)	ND		2.0	ppb (v/v)
Chlorobenzene	ND		2.0	ppb (v/v)
Ethylbenzene	ND		2.0	ppb (v/v)
Xylenes (total)	ND		2.0	ppb (v/v)
Styrene	ND		2.0	ppb (v/v)
Bromoform	ND		2.0	ppb (v/v)
1,1,2,2-Tetrachloroethane	ND		2.0	ppb (v/v)
Benzyl chloride	ND		10	ppb (v/v)
4-Ethyltoluene	ND		2.0	ppb (v/v)
1,3,5-Trimethylbenzene	ND		2.0	ppb (v/v)
1,2,4-Trimethylbenzene	ND		2.0	ppb (v/v)

ND = Not Detected

Volatile Organics by GCMS - EPA TO14

Client Name: Montgomery Watson  
 Client ID: AD-0-06-23-97  
 LAB ID: 126651-0001-SA  
 Matrix: AIR                      Sampled: 23 JUN 97                      Received: 25 JUN 97  
 Authorized: 25 JUN 97              Prepared: N/A                      Analyzed: 02 JUL 97  
 Instrument: GC/MS-B                Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
1,3-Dichlorobenzene	ND		2.0	ppb (v/v)
1,4-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2,4-Trichlorobenzene	ND		20	ppb (v/v)
Hexachlorobutadiene	ND		4.0	ppb (v/v)

ND = Not Detected

## UPWIND

## Volatile Organics by GCMS - EPA TO14



Environmental  
Services

Client Name:	Montgomery Watson		
Client ID:	AU-0-06-23-97		
LAB ID:	126651-0002-SA		
Matrix:	AIR	Sampled: 23 JUN 97	Received: 25 JUN 97
Authorized:	25 JUN 97	Prepared: N/A	Analyzed: 02 JUL 97
Instrument:	GC/MS-B	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
Dichlorodifluoromethane	ND		2.0	ppb (v/v)
Chloromethane	ND		4.0	ppb (v/v)
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		2.0	ppb (v/v)
Vinyl chloride	ND		2.0	ppb (v/v)
Bromomethane	ND		2.0	ppb (v/v)
Chloroethane	ND		4.0	ppb (v/v)
Trichlorofluoromethane	ND		2.0	ppb (v/v)
1,1-Dichloroethene	ND		2.0	ppb (v/v)
Carbon disulfide	ND		10	ppb (v/v)
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	ppb (v/v)
Acetone	ND		10	ppb (v/v)
Methylene chloride	ND		2.0	ppb (v/v)
trans-1,2-Dichloroethene	ND		2.0	ppb (v/v)
1,1-Dichloroethane	ND		2.0	ppb (v/v)
Vinyl acetate	ND		10	ppb (v/v)
cis-1,2-Dichloroethene	ND		2.0	ppb (v/v)
2-Butanone	ND		10	ppb (v/v)
Chloroform	ND		2.0	ppb (v/v)
1,1,1-Trichloroethane	ND		2.0	ppb (v/v)
Carbon tetrachloride	ND		2.0	ppb (v/v)
Benzene	ND		2.0	ppb (v/v)
1,2-Dichloroethane	ND		2.0	ppb (v/v)
Trichloroethene	ND		2.0	ppb (v/v)
1,2-Dichloropropane	ND		2.0	ppb (v/v)
Bromodichloromethane	ND		2.0	ppb (v/v)
cis-1,3-Dichloropropene	ND		2.0	ppb (v/v)
4-Methyl-2-pentanone	ND		10	ppb (v/v)
Toluene	ND		2.0	ppb (v/v)
trans-1,3-Dichloropropene	ND		2.0	ppb (v/v)
1,1,2-Trichloroethane	ND		2.0	ppb (v/v)
Tetrachloroethene	ND		2.0	ppb (v/v)
2-Hexanone	ND		30	ppb (v/v)
Dibromochloromethane	ND		2.0	ppb (v/v)
1,2-Dibromoethane (EDB)	ND		2.0	ppb (v/v)
Chlorobenzene	ND		2.0	ppb (v/v)
Ethylbenzene	ND		2.0	ppb (v/v)
Xylenes (total)	ND		2.0	ppb (v/v)
Styrene	ND		2.0	ppb (v/v)
Bromoform	ND		2.0	ppb (v/v)
1,1,2,2-Tetrachloroethane	ND		2.0	ppb (v/v)
Benzyl chloride	ND		10	ppb (v/v)
4-Ethyltoluene	ND		2.0	ppb (v/v)
1,3,5-Trimethylbenzene	ND		2.0	ppb (v/v)
1,2,4-Trimethylbenzene	ND		2.0	ppb (v/v)

ND = Not Detected

Volatile Organics by GCMS - EPA TO14

Client Name:	Montgomery Watson		
Client ID:	AU-0-06-23-97		
LAB ID:	126651-0002-SA		
Matrix:	AIR	Sampled: 23 JUN 97	Received: 25 JUN 97
Authorized:	25 JUN 97	Prepared: N/A	Analyzed: 02 JUL 97
Instrument:	GC/MS-B	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
1,3-Dichlorobenzene	ND		2.0	ppb (v/v)
1,4-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2,4-Trichlorobenzene	ND		20	ppb (v/v)
Hexachlorobutadiene	ND		4.0	ppb (v/v)

ND = Not Detected



DAY 1 DATA  
EXCAVATION AT TEST PIT LOCATION #4, #5

SAMPLE DESCRIPTION INFORMATION  
for  
Montgomery Watson

Lab ID	Client ID	Matrix	Sampled Date	Received Date
126652-0001-SA	AU-1-06-25-97	AIR	25 JUN 97	18:00 26 JUN 97
126652-0002-SA	AD-1-06-25-97	AIR	25 JUN 97	18:00 26 JUN 97

## UPWIND



## Volatile Organics by GCMS - EPA TO14

Environmental  
Services

Client Name: Montgomery Watson  
 Client ID: AU-1-06-25-97  
 LAB ID: 126652-0001-SA  
 Matrix: AIR  
 Authorized: 26 JUN 97  
 Instrument: GC/MS-B

Sampled: 25 JUN 97  
 Prepared: N/A  
 Dilution: 1.0

Received: 26 JUN 97  
 Analyzed: 02 JUL 97

Parameter	Result	Qualifier	RL	Units
Dichlorodifluoromethane	ND		2.0	ppb (v/v)
Chloromethane	ND		4.0	ppb (v/v)
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		2.0	ppb (v/v)
Vinyl chloride	ND		2.0	ppb (v/v)
Bromomethane	ND		2.0	ppb (v/v)
Chloroethane	ND		4.0	ppb (v/v)
Trichlorodifluoromethane	ND		2.0	ppb (v/v)
1,1-Dichloroethene	ND		2.0	ppb (v/v)
Carbon disulfide	ND		10	ppb (v/v)
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	ppb (v/v)
Acetone	15		10	ppb (v/v)
Methylene chloride	3.8		2.0	ppb (v/v)
trans-1,2-Dichloroethene	ND		2.0	ppb (v/v)
1,1-Dichloroethane	ND		2.0	ppb (v/v)
Vinyl acetate	ND		10	ppb (v/v)
cis-1,2-Dichloroethene	ND		2.0	ppb (v/v)
2-Butanone	ND		10	ppb (v/v)
Chloroform	ND		2.0	ppb (v/v)
1,1,1-Trichloroethane	ND		2.0	ppb (v/v)
Carbon tetrachloride	ND		2.0	ppb (v/v)
Benzene	ND		2.0	ppb (v/v)
1,2-Dichloroethane	ND		2.0	ppb (v/v)
Trichloroethene	ND		2.0	ppb (v/v)
1,2-Dichloropropane	ND		2.0	ppb (v/v)
Bromodichloromethane	ND		2.0	ppb (v/v)
cis-1,3-Dichloropropene	ND		2.0	ppb (v/v)
4-Methyl-2-pentanone	ND		10	ppb (v/v)
Toluene	4.3		2.0	ppb (v/v)
trans-1,3-Dichloropropene	ND		2.0	ppb (v/v)
1,1,2-Trichloroethane	ND		2.0	ppb (v/v)
Tetrachloroethene	ND		2.0	ppb (v/v)
2-Hexanone	ND		30	ppb (v/v)
Dibromochloromethane	ND		2.0	ppb (v/v)
1,2-Dibromoethane (EDB)	ND		2.0	ppb (v/v)
Chlorobenzene	ND		2.0	ppb (v/v)
Ethylbenzene	ND		2.0	ppb (v/v)
Xylenes (total)	ND		2.0	ppb (v/v)
Styrene	ND		2.0	ppb (v/v)
Bromoform	ND		2.0	ppb (v/v)
1,1,2,2-Tetrachloroethane	ND		2.0	ppb (v/v)
Benzyl chloride	ND		10	ppb (v/v)
4-Ethyltoluene	ND		2.0	ppb (v/v)
1,3,5-Trimethylbenzene	ND		2.0	ppb (v/v)
1,2,4-Trimethylbenzene	ND		2.0	ppb (v/v)

ND = Not Detected

Volatile Organics by GCMS - EPA TO14

Client Name:	Montgomery Watson		
Client ID:	AU-1-06-25-97		
LAB ID:	126652-0001-SA		
Matrix:	AIR	Sampled: 25 JUN 97	Received: 26 JUN 97
Authorized:	26 JUN 97	Prepared: N/A	Analyzed: 02 JUL 97
Instrument:	GC/MS-B	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
1,3-Dichlorobenzene	ND		2.0	ppb (v/v)
1,4-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2,4-Trichlorobenzene	ND		20	ppb (v/v)
Hexachlorobutadiene	ND		4.0	ppb (v/v)

## DOWNIND



## Volatile Organics by GCMS - EPA TO14

Environmental  
Services

Client Name: Montgomery Watson Analytical Testing Services  
 Client ID: AD-1-06-25-97  
 LAB ID: 126652-0002-SA  
 Matrix: AIR                      Sampled: 25 JUN 97                      Received: 26 JUN 97  
 Authorized: 26 JUN 97              Prepared: N/A                      Analyzed: 02 JUL 97  
 Instrument: GC/MS-B              Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
Dichlorodifluoromethane	ND		2.0	ppb (v/v)
Chloromethane	ND		4.0	ppb (v/v)
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		2.0	ppb (v/v)
Vinyl chloride	ND		2.0	ppb (v/v)
Bromomethane	ND		2.0	ppb (v/v)
Chloroethane	ND		4.0	ppb (v/v)
Trichlorofluoromethane	ND		2.0	ppb (v/v)
1,1-Dichloroethene	ND		2.0	ppb (v/v)
Carbon disulfide	ND		10	ppb (v/v)
1,1,2-Trichloro-1,2,2-trifluoroethane	2.7		2.0	ppb (v/v)
Acetone	39		10	ppb (v/v)
Methylene chloride	14		2.0	ppb (v/v)
trans-1,2-Dichloroethene	ND		2.0	ppb (v/v)
1,1-Dichloroethane	ND		2.0	ppb (v/v)
Vinyl acetate	ND		10	ppb (v/v)
cis-1,2-Dichloroethene	ND		2.0	ppb (v/v)
2-Butanone	25		10	ppb (v/v)
Chloroform	3.2		2.0	ppb (v/v)
1,1,1-Trichloroethane	7.4		2.0	ppb (v/v)
Carbon tetrachloride	ND		2.0	ppb (v/v)
Benzene	8.6		2.0	ppb (v/v)
1,2-Dichloroethane	ND		2.0	ppb (v/v)
Trichloroethene	6.6		2.0	ppb (v/v)
1,2-Dichloropropane	ND		2.0	ppb (v/v)
Bromodichloromethane	ND		2.0	ppb (v/v)
cis-1,3-Dichloropropene	ND		2.0	ppb (v/v)
4-Methyl-2-pentanone	ND		10	ppb (v/v)
Toluene	52		2.0	ppb (v/v)
trans-1,3-Dichloropropene	ND		2.0	ppb (v/v)
1,1,2-Trichloroethane	ND		2.0	ppb (v/v)
Tetrachloroethene	30		2.0	ppb (v/v)
2-Hexanone	ND		30	ppb (v/v)
Dibromochloromethane	ND		2.0	ppb (v/v)
1,2-Dibromoethane (EDB)	ND		2.0	ppb (v/v)
Chlorobenzene	ND		2.0	ppb (v/v)
Ethylbenzene	4.5		2.0	ppb (v/v)
Xylenes (total)	18		2.0	ppb (v/v)
Styrene	ND		2.0	ppb (v/v)
Bromoform	ND		2.0	ppb (v/v)
1,1,2,2-Tetrachloroethane	ND		2.0	ppb (v/v)
Benzyl chloride	ND		10	ppb (v/v)
4-Ethyltoluene	3.0		2.0	ppb (v/v)
1,3,5-Trimethylbenzene	ND		2.0	ppb (v/v)
1,2,4-Trimethylbenzene	3.1		2.0	ppb (v/v)

ND = Not Detected

Volatile Organics by GCMS - EPA TO14

Client Name: Montgomery Watson Analytical Testing Services  
 Client ID: AD-1-06-25-97  
 LAB ID: 126652-0002-SA  
 Matrix: AIR                      Sampled: 25 JUN 97                      Received: 26 JUN 97  
 Authorized: 26 JUN 97              Prepared: N/A                      Analyzed: 02 JUL 97  
 Instrument: GC/MS-B                Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
1,3-Dichlorobenzene	ND		2.0	ppb (v/v)
1,4-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2,4-Trichlorobenzene	ND		20	ppb (v/v)
Hexachlorobutadiene	ND		4.0	ppb (v/v)

ND = Not Detected

DAY 2 DATA  
EXCAVATION OF TEST PIT #2 & #4, #3  
FURTHER EXCAVATION OF TEST PIT #5



SAMPLE DESCRIPTION INFORMATION  
for  
Montgomery Watson

Lab ID	Client ID	Matrix	Sampled Date	Received Time	Received Date
126654-0001-SA	AD-2-06-26-97	AIR	26 JUN 97	09:00	27 JUN 97
126654-0002-SA	AU-2-06-26-97	AIR	26 JUN 97	09:05	27 JUN 97

## DOWNWIND



## Volatile Organics by GCMS - EPA TO14

Client Name: Montgomery Watson  
 Client ID: AD-2-06-26-97  
 LAB ID: 126654-0001-SA  
 Matrix: AIR                      Sampled: 26 JUN 97                      Received: 27 JUN 97  
 Authorized: 27 JUN 97              Prepared: N/A                      Analyzed: 02 JUL 97  
 Instrument: GC/MS-B              Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
Dichlorodifluoromethane	ND		2.0	ppb (v/v)
Chloromethane	ND		4.0	ppb (v/v)
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		2.0	ppb (v/v)
Vinyl chloride	ND		2.0	ppb (v/v)
Bromomethane	ND		2.0	ppb (v/v)
Chloroethane	ND		4.0	ppb (v/v)
Trichlorofluoromethane	ND		2.0	ppb (v/v)
1,1-Dichloroethene	ND		2.0	ppb (v/v)
Carbon disulfide	ND		10	ppb (v/v)
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	ppb (v/v)
Acetone	360		10	ppb (v/v)
Methylene chloride	56		2.0	ppb (v/v)
trans-1,2-Dichloroethene	ND		2.0	ppb (v/v)
1,1-Dichloroethane	ND		2.0	ppb (v/v)
Vinyl acetate	ND		10	ppb (v/v)
cis-1,2-Dichloroethene	3.0		2.0	ppb (v/v)
2-Butanone	58		10	ppb (v/v)
Chloroform	ND		2.0	ppb (v/v)
1,1,1-Trichloroethane	3.6		2.0	ppb (v/v)
Carbon tetrachloride	ND		2.0	ppb (v/v)
Benzene	2.2		2.0	ppb (v/v)
1,2-Dichloroethane	ND		2.0	ppb (v/v)
Trichloroethene	6.0		2.0	ppb (v/v)
1,2-Dichloropropane	ND		2.0	ppb (v/v)
Bromodichloromethane	ND		2.0	ppb (v/v)
cis-1,3-Dichloropropene	ND		2.0	ppb (v/v)
4-Methyl-2-pentanone	ND	G	28	ppb (v/v)
Toluene	72		2.0	ppb (v/v)
trans-1,3-Dichloropropene	ND		2.0	ppb (v/v)
1,1,2-Trichloroethane	ND		2.0	ppb (v/v)
Tetrachloroethene	11		2.0	ppb (v/v)
2-Hexanone	ND		30	ppb (v/v)
Dibromochloromethane	ND		2.0	ppb (v/v)
1,2-Dibromoethane (EDB)	ND		2.0	ppb (v/v)
Chlorobenzene	ND		2.0	ppb (v/v)
Ethylbenzene	19		2.0	ppb (v/v)
Xylenes (total)	110		2.0	ppb (v/v)
Styrene	3.8		2.0	ppb (v/v)
Bromoform	ND		2.0	ppb (v/v)
1,1,2,2-Tetrachloroethane	ND		2.0	ppb (v/v)
Benzyl chloride	ND		10	ppb (v/v)
4-Ethyltoluene	6.0		2.0	ppb (v/v)
1,3,5-Trimethylbenzene	2.4		2.0	ppb (v/v)

G = Reporting limit(s) raised due to matrix interference.

ND = Not Detected

Volatile Organics by GCMS - EPA TO14

Client Name: Montgomery Watson  
 Client ID: AD-2-06-26-97  
 LAB ID: 126654-0001-SA  
 Matrix: AIR                      Sampled: 26 JUN 97                      Received: 27 JUN 97  
 Authorized: 27 JUN 97              Prepared: N/A                      Analyzed: 02 JUL 97  
 Instrument: GC/MS-B              Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
1,2,4-Trimethylbenzene	8.3		2.0	ppb (v/v)
1,3-Dichlorobenzene	ND		2.0	ppb (v/v)
1,4-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2,4-Trichlorobenzene	ND		20	ppb (v/v)
Hexachlorobutadiene	ND		4.0	ppb (v/v)

ND = Not Detected

UPWIND



## Volatile Organics by GCMS - EPA TO14

Environmental  
Services

Client Name: Montgomery Watson  
 Client ID: AU-2-06-26-97  
 LAB ID: 126654-0002-SA  
 Matrix: AIR                      Sampled: 26 JUN 97                      Received: 27 JUN 97  
 Authorized: 27 JUN 97              Prepared: N/A                      Analyzed: 02 JUL 97  
 Instrument: GC/MS-B              Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
Dichlorodifluoromethane	ND		2.0	ppb (v/v)
Chloromethane	ND		4.0	ppb (v/v)
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		2.0	ppb (v/v)
Vinyl chloride	ND		2.0	ppb (v/v)
Bromomethane	ND		2.0	ppb (v/v)
Chloroethane	ND		4.0	ppb (v/v)
Trichlorofluoromethane	ND		2.0	ppb (v/v)
1,1-Dichloroethene	ND		2.0	ppb (v/v)
Carbon disulfide	ND		10	ppb (v/v)
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	ppb (v/v)
Acetone	18		10	ppb (v/v)
Methylene chloride	11		2.0	ppb (v/v)
trans-1,2-Dichloroethene	ND		2.0	ppb (v/v)
1,1-Dichloroethane	ND		2.0	ppb (v/v)
Vinyl acetate	ND		10	ppb (v/v)
cis-1,2-Dichloroethene	ND		2.0	ppb (v/v)
2-Butanone	ND		10	ppb (v/v)
Chloroform	ND		2.0	ppb (v/v)
1,1,1-Trichloroethane	5.5		2.0	ppb (v/v)
Carbon tetrachloride	ND		2.0	ppb (v/v)
Benzene	8.0		2.0	ppb (v/v)
1,2-Dichloroethane	ND		2.0	ppb (v/v)
Trichloroethene	6.6		2.0	ppb (v/v)
1,2-Dichloropropane	ND		2.0	ppb (v/v)
Bromodichloromethane	ND		2.0	ppb (v/v)
cis-1,3-Dichloropropene	ND		2.0	ppb (v/v)
4-Methyl-2-pentanone	ND		10	ppb (v/v)
Toluene	46		2.0	ppb (v/v)
trans-1,3-Dichloropropene	ND		2.0	ppb (v/v)
1,1,2-Trichloroethane	ND		2.0	ppb (v/v)
Tetrachloroethene	9.5		2.0	ppb (v/v)
2-Hexanone	ND		30	ppb (v/v)
Dibromochloromethane	ND		2.0	ppb (v/v)
1,2-Dibromoethane (EDB)	ND		2.0	ppb (v/v)
Chlorobenzene	ND		2.0	ppb (v/v)
Ethylbenzene	4.1		2.0	ppb (v/v)
Xylenes (total)	23		2.0	ppb (v/v)
Styrene	ND		2.0	ppb (v/v)
Bromoform	ND		2.0	ppb (v/v)
1,1,2,2-Tetrachloroethane	ND		2.0	ppb (v/v)
Benzyl chloride	ND		10	ppb (v/v)
4-Ethyltoluene	4.8		2.0	ppb (v/v)
1,3,5-Trimethylbenzene	ND		2.0	ppb (v/v)
1,2,4-Trimethylbenzene	4.6		2.0	ppb (v/v)

ND = Not Detected

Volatile Organics by GCMS - EPA TO14

Client Name: Montgomery Watson  
 Client ID: AU-2-06-26-97  
 LAB ID: 126654-0002-SA  
 Matrix: AIR                      Sampled: 26 JUN 97                      Received: 27 JUN 97  
 Authorized: 27 JUN 97              Prepared: N/A                      Analyzed: 02 JUL 97  
 Instrument: GC/MS-B                Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
1,3-Dichlorobenzene	ND		2.0	ppb (v/v)
1,4-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2,4-Trichlorobenzene	ND		20	ppb (v/v)
Hexachlorobutadiene	ND		4.0	ppb (v/v)

ND = Not Detected



Environmental  
Services

SAMPLE DESCRIPTION INFORMATION  
for  
Montgomery Watson

Lab ID	Client ID	Matrix	Sampled Date	Received Time	Received Date
126996-0001-SA	AU-3-07-16-97	AIR	16 JUL 97		21 JUL 97
126996-0002-SA	AD-3-07-16-97	AIR	16 JUL 97		21 JUL 97
126996-0003-SA	AU-4-07-17-97	AIR	17 JUL 97		21 JUL 97
126996-0004-SA	AD-4-07-17-97	AIR	17 JUL 97		21 JUL 97
126996-0005-SA	AU-5-07-18-97	AIR	18 JUL 97		21 JUL 97
126996-0006-SA	AD-5-07-18-97	AIR	18 JUL 97		21 JUL 97

DAY 3  
DAY 4  
DAY 5      W/ FOCUS ENVIRONMENTAL &  
                  MIDWEST MATERIAL SERVICES

- TRENCH EXCAVATION (PERIMETER)
- POINT EXCAVATION



Environmental  
Services

Volatile Organics by GCMS - EPA TO14

Client Name: Montgomery Watson  
Client ID: AU-3-07-16-97  
LAB ID: 126996-0001-SA  
Matrix: AIR      Sampled: 16 JUL 97      Received: 21 JUL 97  
Authorized: 21 JUL 97      Prepared: N/A      Analyzed: 31 JUL 97  
Instrument: GC/MS-B      Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
Dichlorodifluoromethane	ND	2.0	ppb	(v/v)
Chloromethane	ND	4.0	ppb	(v/v)
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	2.0	ppb	(v/v)
Vinyl chloride	ND	2.0	ppb	(v/v)
Bromomethane	ND	2.0	ppb	(v/v)
Chloroethane	ND	4.0	ppb	(v/v)
Trichlorofluoromethane	ND	2.0	ppb	(v/v)
1,1-Dichloroethene	ND	2.0	ppb	(v/v)
Carbon disulfide	ND	10	ppb	(v/v)
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	2.0	ppb	(v/v)
Acetone	ND	10	ppb	(v/v)
Methylene chloride	2.0	2.0	ppb	(v/v)
trans-1,2-Dichloroethene	ND	2.0	ppb	(v/v)
1,1-Dichloroethane	ND	2.0	ppb	(v/v)
Vinyl acetate	ND	10	ppb	(v/v)
cis-1,2-Dichloroethene	ND	2.0	ppb	(v/v)
2-Butanone	ND	10	ppb	(v/v)
Chloroform	ND	2.0	ppb	(v/v)
1,1,1-Trichloroethane	ND	2.0	ppb	(v/v)
Carbon tetrachloride	ND	2.0	ppb	(v/v)
Benzene	ND	2.0	ppb	(v/v)
1,2-Dichloroethane	ND	2.0	ppb	(v/v)
Trichloroethene	ND	2.0	ppb	(v/v)
1,2-Dichloropropane	ND	2.0	ppb	(v/v)
Bromodichloromethane	ND	2.0	ppb	(v/v)
cis-1,3-Dichloropropene	ND	2.0	ppb	(v/v)
4-Methyl-2-pentanone	ND	10	ppb	(v/v)
Toluene	5.0	2.0	ppb	(v/v)
trans-1,3-Dichloropropene	ND	2.0	ppb	(v/v)
1,1,2-Trichloroethane	ND	2.0	ppb	(v/v)
Tetrachloroethene	3.2	2.0	ppb	(v/v)
2-Hexanone	ND	30	ppb	(v/v)
Dibromochloromethane	ND	2.0	ppb	(v/v)
1,2-Dibromoethane (EDB)	ND	2.0	ppb	(v/v)
Chlorobenzene	ND	2.0	ppb	(v/v)
Ethylbenzene	ND	2.0	ppb	(v/v)
Xylenes (total)	12	2.0	ppb	(v/v)
Styrene	ND	2.0	ppb	(v/v)
Bromoform	ND	2.0	ppb	(v/v)
1,1,2,2-Tetrachloroethane	ND	2.0	ppb	(v/v)
Benzyl chloride	ND	10	ppb	(v/v)
4-Ethyltoluene	2.1	2.0	ppb	(v/v)
1,3,5-Trimethylbenzene	ND	2.0	ppb	(v/v)
1,2,4-Trimethylbenzene	2.6	2.0	ppb	(v/v)

ND = Not Detected



## Volatile Organics by GCMS - EPA TO14

Environmental  
Services (cont.)

Client Name: Montgomery Watson  
Client ID: AU-3-07-16-97  
LAB ID: 126996-0001-SA  
Matrix: AIR                      Sampled: 16 JUL 97                      Received: 21 JUL 97  
Authorized: 21 JUL 97              Prepared: N/A                      Analyzed: 31 JUL 97  
Instrument: GC/MS-B              Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
1,3-Dichlorobenzene	ND		2.0	ppb (v/v)
1,4-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2,4-Trichlorobenzene	ND		20	ppb (v/v)
Hexachlorobutadiene	ND		4.0	ppb (v/v)

ND = Not Detected



Environmental  
Services

Volatile Organics by GCMS - EPA TO14

Client Name: Montgomery Watson  
Client ID: AD-3-07-16-97  
LAB ID: 126996-0002-SA  
Matrix: AIR      Sampled: 16 JUL 97      Received: 21 JUL 97  
Authorized: 21 JUL 97      Prepared: N/A      Analyzed: 31 JUL 97  
Instrument: GC/MS-B      Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
Dichlorodifluoromethane	ND		2.0	ppb (v/v)
Chloromethane	ND		4.0	ppb (v/v)
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		2.0	ppb (v/v)
Vinyl chloride	ND		2.0	ppb (v/v)
Bromomethane	ND		2.0	ppb (v/v)
Chloroethane	ND		4.0	ppb (v/v)
Trichlorofluoromethane	ND		2.0	ppb (v/v)
1,1-Dichloroethene	ND		2.0	ppb (v/v)
Carbon disulfide	ND		10	ppb (v/v)
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	ppb (v/v)
Acetone	19		10	ppb (v/v)
Methylene chloride	5.0		2.0	ppb (v/v)
trans-1,2-Dichloroethene	ND		2.0	ppb (v/v)
1,1-Dichloroethane	ND		2.0	ppb (v/v)
Vinyl acetate	ND		10	ppb (v/v)
cis-1,2-Dichloroethene	ND		2.0	ppb (v/v)
2-Butanone	ND		10	ppb (v/v)
Chloroform	ND		2.0	ppb (v/v)
1,1,1-Trichloroethane	4.3		2.0	ppb (v/v)
Carbon tetrachloride	ND		2.0	ppb (v/v)
Benzene	5.6		2.0	ppb (v/v)
1,2-Dichloroethane	ND		2.0	ppb (v/v)
Trichloroethene	ND		2.0	ppb (v/v)
1,2-Dichloropropane	ND		2.0	ppb (v/v)
Bromodichloromethane	ND		2.0	ppb (v/v)
cis-1,3-Dichloropropene	ND		2.0	ppb (v/v)
4-Methyl-2-pentanone	ND		10	ppb (v/v)
Toluene	18		2.0	ppb (v/v)
trans-1,3-Dichloropropene	ND		2.0	ppb (v/v)
1,1,2-Trichloroethane	ND		2.0	ppb (v/v)
Tetrachloroethene	3.5		2.0	ppb (v/v)
2-Hexanone	ND		30	ppb (v/v)
Dibromochloromethane	ND		2.0	ppb (v/v)
1,2-Dibromoethane (EDB)	ND		2.0	ppb (v/v)
Chlorobenzene	ND		2.0	ppb (v/v)
Ethylbenzene	2.4		2.0	ppb (v/v)
Xylenes (total)	14		2.0	ppb (v/v)
Styrene	ND		2.0	ppb (v/v)
Bromoform	ND		2.0	ppb (v/v)
1,1,2,2-Tetrachloroethane	ND		2.0	ppb (v/v)
Benzyl chloride	ND		10	ppb (v/v)
4-Ethyltoluene	ND		2.0	ppb (v/v)
1,3,5-Trimethylbenzene	ND		2.0	ppb (v/v)
1,2,4-Trimethylbenzene	ND		2.0	ppb (v/v)

ND = Not Detected

Volatile Organics by GCMS - EPA TO14

Client Name: Montgomery Watson  
 Client ID: AD-3-07-16-97  
 LAB ID: 126996-0002-SA  
 Matrix: AIR                      Sampled: 16 JUL 97                      Received: 21 JUL 97  
 Authorized: 21 JUL 97              Prepared: N/A                      Analyzed: 31 JUL 97  
 Instrument: GC/MS-B              Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
1,3-Dichlorobenzene	ND		2.0	ppb (v/v)
1,4-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2,4-Trichlorobenzene	ND		20	ppb (v/v)
Hexachlorobutadiene	ND		4.0	ppb (v/v)

ND = Not Detected

Environmental  
Services

## Volatile Organics by GCMS - EPA TO14

Client Name: Montgomery Watson  
Client ID: AU-4-07-17-97  
LAB ID: 126996-0003-SA  
Matrix: AIR                      Sampled: 17 JUL 97                      Received: 21 JUL 97  
Authorized: 21 JUL 97              Prepared: N/A                      Analyzed: 31 JUL 97  
Instrument: GC/MS-B              Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
Dichlorodifluoromethane	ND		2.0	ppb (v/v)
Chloromethane	ND		4.0	ppb (v/v)
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		2.0	ppb (v/v)
Vinyl chloride	ND		2.0	ppb (v/v)
Bromomethane	ND		2.0	ppb (v/v)
Chloroethane	ND		4.0	ppb (v/v)
Trichlorofluoromethane	ND		2.0	ppb (v/v)
1,1-Dichloroethene	ND		2.0	ppb (v/v)
Carbon disulfide	ND		10	ppb (v/v)
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	ppb (v/v)
Acetone	ND		10	ppb (v/v)
Methylene chloride	ND		2.0	ppb (v/v)
trans-1,2-Dichloroethene	ND		2.0	ppb (v/v)
1,1-Dichloroethane	ND		2.0	ppb (v/v)
Vinyl acetate	ND		10	ppb (v/v)
cis-1,2-Dichloroethene	ND		2.0	ppb (v/v)
2-Butanone	ND		10	ppb (v/v)
Chloroform	ND		2.0	ppb (v/v)
1,1,1-Trichloroethane	ND		2.0	ppb (v/v)
Carbon tetrachloride	ND		2.0	ppb (v/v)
Benzene	ND		2.0	ppb (v/v)
1,2-Dichloroethane	ND		2.0	ppb (v/v)
Trichloroethene	ND		2.0	ppb (v/v)
1,2-Dichloropropane	ND		2.0	ppb (v/v)
Bromodichloromethane	ND		2.0	ppb (v/v)
cis-1,3-Dichloropropene	ND		2.0	ppb (v/v)
4-Methyl-2-pentanone	ND		10	ppb (v/v)
Toluene	ND		2.0	ppb (v/v)
trans-1,3-Dichloropropene	ND		2.0	ppb (v/v)
1,1,2-Trichloroethane	ND		2.0	ppb (v/v)
Tetrachloroethene	ND		2.0	ppb (v/v)
2-Hexanone	ND		30	ppb (v/v)
Dibromochloromethane	ND		2.0	ppb (v/v)
1,2-Dibromoethane (EDB)	ND		2.0	ppb (v/v)
Chlorobenzene	ND		2.0	ppb (v/v)
Ethylbenzene	ND		2.0	ppb (v/v)
Xylenes (total)	2.3		2.0	ppb (v/v)
Styrene	ND		2.0	ppb (v/v)
Bromoform	ND		2.0	ppb (v/v)
1,1,2,2-Tetrachloroethane	ND		2.0	ppb (v/v)
Benzyl chloride	ND		10	ppb (v/v)
4-Ethyltoluene	ND		2.0	ppb (v/v)
1,3,5-Trimethylbenzene	ND		2.0	ppb (v/v)
1,2,4-Trimethylbenzene	ND		2.0	ppb (v/v)

ND = Not Detected

Volatile Organics by GCMS - EPA TO14

Client Name: Montgomery Watson  
 Client ID: AU-4-07-17-97  
 LAB ID: 126996-0003-SA  
 Matrix: AIR                      Sampled: 17 JUL 97                      Received: 21 JUL 97  
 Authorized: 21 JUL 97              Prepared: N/A                      Analyzed: 31 JUL 97  
 Instrument: GC/MS-B              Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
1,3-Dichlorobenzene	ND		2.0	ppb (v/v)
1,4-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2,4-Trichlorobenzene	ND		20	ppb (v/v)
Hexachlorobutadiene	ND		4.0	ppb (v/v)



Environmental  
Services

Volatile Organics by GCMS - EPA TO14

Client Name: Montgomery Watson  
Client ID: AD-4-07-17-97  
LAB ID: 126996-0004-SA  
Matrix: AIR      Sampled: 17 JUL 97      Received: 21 JUL 97  
Authorized: 21 JUL 97      Prepared: N/A      Analyzed: 31 JUL 97  
Instrument: GC/MS-B      Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
Dichlorodifluoromethane	ND		2.0	ppb (v/v)
Chloromethane	ND		4.0	ppb (v/v)
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		2.0	ppb (v/v)
Vinyl chloride	ND		2.0	ppb (v/v)
Bromomethane	ND		2.0	ppb (v/v)
Chloroethane	ND		4.0	ppb (v/v)
Trichlorofluoromethane	ND		2.0	ppb (v/v)
1,1-Dichloroethene	ND		2.0	ppb (v/v)
Carbon disulfide	ND		10	ppb (v/v)
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	ppb (v/v)
Acetone	98		10	ppb (v/v)
Methylene chloride	8.5		2.0	ppb (v/v)
trans-1,2-Dichloroethene	ND		2.0	ppb (v/v)
1,1-Dichloroethane	ND		2.0	ppb (v/v)
Vinyl acetate	ND		10	ppb (v/v)
cis-1,2-Dichloroethene	ND		2.0	ppb (v/v)
2-Butanone	10		10	ppb (v/v)
Chloroform	ND		2.0	ppb (v/v)
1,1,1-Trichloroethane	3.8		2.0	ppb (v/v)
Carbon tetrachloride	ND		2.0	ppb (v/v)
Benzene	7.6		2.0	ppb (v/v)
1,2-Dichloroethane	ND		2.0	ppb (v/v)
Trichloroethene	7.0		2.0	ppb (v/v)
1,2-Dichloropropane	ND		2.0	ppb (v/v)
Bromodichloromethane	ND		2.0	ppb (v/v)
cis-1,3-Dichloropropene	ND		2.0	ppb (v/v)
4-Methyl-2-pentanone	ND		10	ppb (v/v)
Toluene	31		2.0	ppb (v/v)
trans-1,3-Dichloropropene	ND		2.0	ppb (v/v)
1,1,2-Trichloroethane	ND		2.0	ppb (v/v)
Tetrachloroethene	8.6		2.0	ppb (v/v)
2-Hexanone	ND		30	ppb (v/v)
Dibromochloromethane	ND		2.0	ppb (v/v)
1,2-Dibromoethane (EDB)	ND		2.0	ppb (v/v)
Chlorobenzene	ND		2.0	ppb (v/v)
Ethylbenzene	4.4		2.0	ppb (v/v)
Xylenes (total)	20		2.0	ppb (v/v)
Styrene	ND		2.0	ppb (v/v)
Bromoform	ND		2.0	ppb (v/v)
1,1,2,2-Tetrachloroethane	ND		2.0	ppb (v/v)
Benzyl chloride	ND		10	ppb (v/v)
4-Ethyltoluene	6.2		2.0	ppb (v/v)
1,3,5-Trimethylbenzene	3.2		2.0	ppb (v/v)
1,2,4-Trimethylbenzene	12		2.0	ppb (v/v)

ND = Not Detected

Volatile Organics by GCMS - EPA TO14

Client Name: Montgomery Watson  
 Client ID: AD-4-07-17-97  
 LAB ID: 126996-0004-SA  
 Matrix: AIR                      Sampled: 17 JUL 97                      Received: 21 JUL 97  
 Authorized: 21 JUL 97              Prepared: N/A                      Analyzed: 31 JUL 97  
 Instrument: GC/MS-B              Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
1,3-Dichlorobenzene	ND		2.0	ppb (v/v)
1,4-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2,4-Trichlorobenzene	ND		20	ppb (v/v)
Hexachlorobutadiene	ND		4.0	ppb (v/v)

ND = Not Detected



Environmental  
Services

Volatile Organics by GCMS - EPA TO14

Client Name: Montgomery Watson  
Client ID: AU-5-07-18-97  
LAB ID: 126996-0005-SA  
Matrix: AIR      Sampled: 18 JUL 97      Received: 21 JUL 97  
Authorized: 21 JUL 97      Prepared: N/A      Analyzed: 31 JUL 97  
Instrument: GC/MS-B      Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
Dichlorodifluoromethane	ND		2.0	ppb (v/v)
Chloromethane	ND		4.0	ppb (v/v)
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		2.0	ppb (v/v)
Vinyl chloride	ND		2.0	ppb (v/v)
Bromomethane	ND		2.0	ppb (v/v)
Chloroethane	ND		4.0	ppb (v/v)
Trichlorofluoromethane	ND		2.0	ppb (v/v)
1,1-Dichloroethene	ND		2.0	ppb (v/v)
Carbon disulfide	ND		10	ppb (v/v)
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	ppb (v/v)
Acetone	11		10	ppb (v/v)
Methylene chloride	ND		2.0	ppb (v/v)
trans-1,2-Dichloroethene	ND		2.0	ppb (v/v)
1,1-Dichloroethane	ND		2.0	ppb (v/v)
Vinyl acetate	ND		10	ppb (v/v)
cis-1,2-Dichloroethene	ND		2.0	ppb (v/v)
2-Butanone	ND		10	ppb (v/v)
Chloroform	ND		2.0	ppb (v/v)
1,1,1-Trichloroethane	ND		2.0	ppb (v/v)
Carbon tetrachloride	ND		2.0	ppb (v/v)
Benzene	ND		2.0	ppb (v/v)
1,2-Dichloroethane	ND		2.0	ppb (v/v)
Trichloroethene	ND		2.0	ppb (v/v)
1,2-Dichloropropane	ND		2.0	ppb (v/v)
Bromodichloromethane	ND		2.0	ppb (v/v)
cis-1,3-Dichloropropene	ND		2.0	ppb (v/v)
4-Methyl-2-pentanone	ND		10	ppb (v/v)
Toluene	19		2.0	ppb (v/v)
trans-1,3-Dichloropropene	ND		2.0	ppb (v/v)
1,1,2-Trichloroethane	ND		2.0	ppb (v/v)
Tetrachloroethene	2.3		2.0	ppb (v/v)
2-Hexanone	ND		30	ppb (v/v)
Dibromochloromethane	ND		2.0	ppb (v/v)
1,2-Dibromoethane (EDB)	ND		2.0	ppb (v/v)
Chlorobenzene	ND		2.0	ppb (v/v)
Ethylbenzene	6.1		2.0	ppb (v/v)
Xylenes (total)	39		2.0	ppb (v/v)
Styrene	ND		2.0	ppb (v/v)
Bromoform	ND		2.0	ppb (v/v)
1,1,2,2-Tetrachloroethane	ND		2.0	ppb (v/v)
Benzyl chloride	ND		10	ppb (v/v)
4-Ethyltoluene	4.8		2.0	ppb (v/v)
1,3,5-Trimethylbenzene	2.4		2.0	ppb (v/v)
1,2,4-Trimethylbenzene	7.6		2.0	ppb (v/v)

ND = Not Detected

Volatile Organics by GCMS - EPA TO14

Client Name: Montgomery Watson  
 Client ID: AU-5-07-18-97  
 LAB ID: 126996-0005-SA  
 Matrix: AIR  
 Authorized: 21 JUL 97  
 Instrument: GC/MS-B

Sampled: 18 JUL 97  
 Prepared: N/A  
 Dilution: 1.0

Received: 21 JUL 97  
 Analyzed: 31 JUL 97

Parameter	Result	Qualifier	RL	Units
1,3-Dichlorobenzene	ND		2.0	ppb (v/v)
1,4-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2,4-Trichlorobenzene	ND		20	ppb (v/v)
Hexachlorobutadiene	ND		4.0	ppb (v/v)

ND = Not Detected



## Volatile Organics by GCMS - EPA TO14

*Environmental  
Services*

Client Name: Montgomery Watson  
Client ID: AD-5-07-18-97  
LAB ID: 126996-0006-SA  
Matrix: AIR      Sampled: 18 JUL 97      Received: 21 JUL 97  
Authorized: 21 JUL 97      Prepared: N/A      Analyzed: 31 JUL 97  
Instrument: GC/MS-B      Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
Dichlorodifluoromethane	ND		2.0	ppb (v/v)
Chloromethane	ND		4.0	ppb (v/v)
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		2.0	ppb (v/v)
Vinyl chloride	ND		2.0	ppb (v/v)
Bromomethane	ND		2.0	ppb (v/v)
Chloroethane	ND		4.0	ppb (v/v)
Trichlorofluoromethane	ND		2.0	ppb (v/v)
1,1-Dichloroethene	ND		2.0	ppb (v/v)
Carbon disulfide	ND		10	ppb (v/v)
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	ppb (v/v)
Acetone	ND		10	ppb (v/v)
Methylene chloride	ND		2.0	ppb (v/v)
trans-1,2-Dichloroethene	ND		2.0	ppb (v/v)
1,1-Dichloroethane	ND		2.0	ppb (v/v)
Vinyl acetate	ND		10	ppb (v/v)
cis-1,2-Dichloroethene	ND		2.0	ppb (v/v)
2-Butanone	ND		10	ppb (v/v)
Chloroform	ND		2.0	ppb (v/v)
1,1,1-Trichloroethane	ND		2.0	ppb (v/v)
Carbon tetrachloride	ND		2.0	ppb (v/v)
Benzene	ND		2.0	ppb (v/v)
1,2-Dichloroethane	ND		2.0	ppb (v/v)
Trichloroethene	ND		2.0	ppb (v/v)
1,2-Dichloropropane	ND		2.0	ppb (v/v)
Bromodichloromethane	ND		2.0	ppb (v/v)
cis-1,3-Dichloropropene	ND		2.0	ppb (v/v)
4-Methyl-2-pentanone	ND		10	ppb (v/v)
Toluene	6.2		2.0	ppb (v/v)
trans-1,3-Dichloropropene	ND		2.0	ppb (v/v)
1,1,2-Trichloroethane	ND		2.0	ppb (v/v)
Tetrachloroethene	5.6		2.0	ppb (v/v)
2-Hexanone	ND		30	ppb (v/v)
Dibromochloromethane	ND		2.0	ppb (v/v)
1,2-Dibromoethane (EDB)	ND		2.0	ppb (v/v)
Chlorobenzene	ND		2.0	ppb (v/v)
Ethylbenzene	ND		2.0	ppb (v/v)
Xylenes (total)	3.6		2.0	ppb (v/v)
Styrene	ND		2.0	ppb (v/v)
Bromoform	ND		2.0	ppb (v/v)
1,1,2,2-Tetrachloroethane	ND		2.0	ppb (v/v)
Benzyl chloride	ND		10	ppb (v/v)
4-Ethyltoluene	ND		2.0	ppb (v/v)
1,3,5-Trimethylbenzene	ND		2.0	ppb (v/v)
1,2,4-Trimethylbenzene	ND		2.0	ppb (v/v)

ND = Not Detected

Volatile Organics by GCMS - EPA TO14

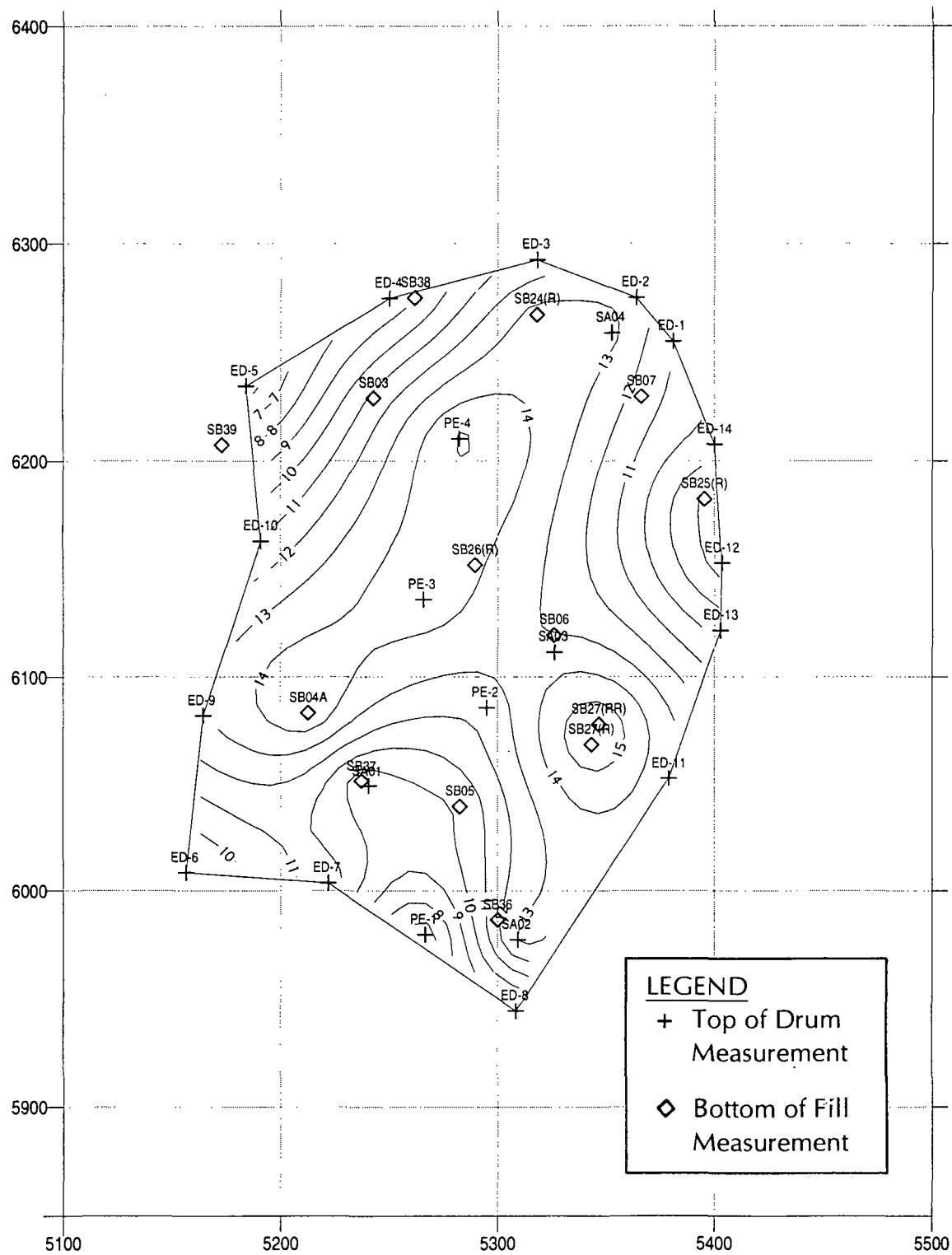
Client Name:	Montgomery Watson		
Client ID:	AD-5-07-18-97		
LAB ID:	126996-0006-SA		
Matrix:	AIR	Sampled: 18 JUL 97	Received: 21 JUL 97
Authorized:	21 JUL 97	Prepared: N/A	Analyzed: 31 JUL 97
Instrument:	GC/MS-B	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
1,3-Dichlorobenzene	ND		2.0	ppb (v/v)
1,4-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2-Dichlorobenzene	ND		2.0	ppb (v/v)
1,2,4-Trichlorobenzene	ND		20	ppb (v/v)
Hexachlorobutadiene	ND		4.0	ppb (v/v)

**APPENDIX J**

**DRUM VOLUME CALCULATIONS**

# Estimated Drum Thickness



## VOLUME COMPUTATIONS

### UPPER SURFACE

Grid File: C:/WINSURF/ACS/TOP.GRD  
Rows: 0 to 32766  
Cols: 0 to 32766  
Grid size as read: 40 cols by 50 rows  
Delta X: 7.94872  
Delta Y: 7.34694  
X-Range: 5100 to 5410  
Y-Range: 5940 to 6300  
Z-Range: 634.785 to 645.383

### LOWER SURFACE

Grid File: C:/WINSURF/ACS/BOTTOM.GRD  
Rows: 0 to 32766  
Cols: 0 to 32766  
Grid size as read: 40 cols by 50 rows  
Delta X: 7.94872  
Delta Y: 7.34694  
X-Range: 5100 to 5410  
Y-Range: 5940 to 6300  
Z-Range: 627.376 to 635.354

### VOLUMES (cubic feet)

Approximated Volume by  
Trapezoidal Rule: 736706 ← Total Volume of Drum  
Simpson's Rule: 736294 Disposal Area  
Simpson's 3/8 Rule: 736419

### CUT & FILL VOLUMES (cubic feet)

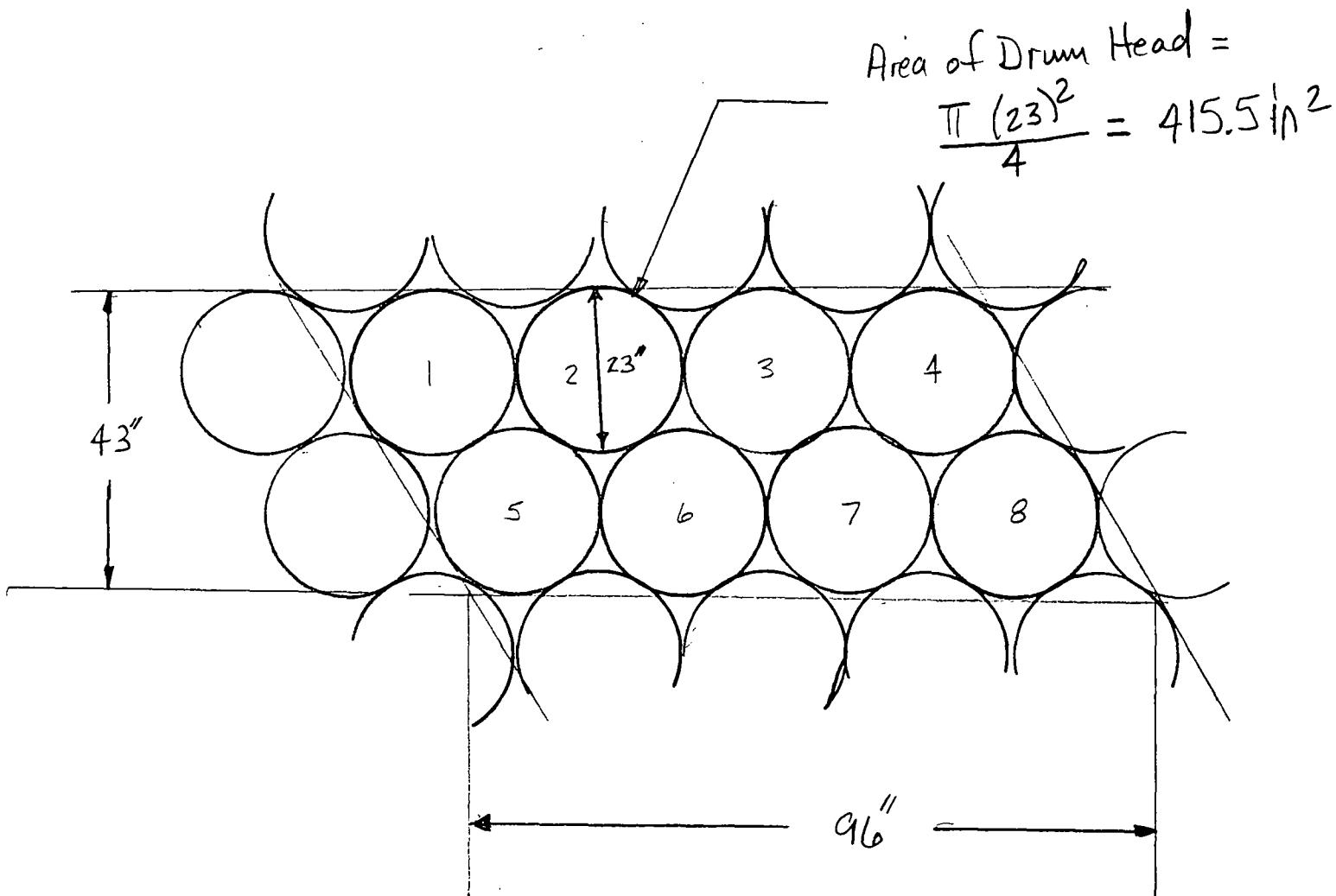
Positive Volume [Cuts]: 736706  
Negative Volume [Fills]: 0  
Cuts minus Fills: 736706

### AREAS (square feet)

Positive Planar Area  
(Upper above Lower): 56734.4  
Negative Planar Area  
(Lower above Upper): 0  
Blanked Planar Area: 54865.6  
Total Planar Area: 111600

Positive Surface Area  
(Upper above Lower): 56880.8  
Negative Surface Area  
(Lower above Upper): 0

# Void Fraction Calculation



$$\text{Total Area of Parallelogram} = (43)(96)$$

$$= 4,128 \text{ in}^2$$

$$\begin{aligned} \text{Total Area of Whole Drums} &= (8)(415.5) \\ &= 3,323 \text{ in}^2 \end{aligned}$$

$$\text{Packing Efficiency} = \frac{3,323}{4,128} = 0.805$$

$$\text{Void Fraction} = 1 - 0.805 = 0.195$$